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Alberta Cancer Registry
1988 Annual Report

ALBERTA CANCER BOARD

Division of Epidemiology
and Preventive Oncology

The Alberta Cancer Board

The Alberta Cancer Board was established in 1968 with the passage of the Cancer Treatment and Prevention Act. Until then, cancer services had fallen under the general mandate of Alberta Health. As the frequency of all cancers increased, and cancer medicine or oncology became more advanced and specialized, the Government of Alberta recognized the importance of passing a Cancer Act and establishing an independent Board to assume responsibility for cancer across the province.

The Board's mandate is to provide comprehensive cancer care through a wide range of cancer programs, from public education and research to treatment and prevention, ensuring that Albertans have access to excellence in patient care.

The Alberta Cancer Board offers programs in both northern and southern Alberta. The Northern Alberta Cancer Program is offered through the Cross Cancer Institute in Edmonton and through associated clinics in Grande Prairie, Peace River, Fort McMurray, and Red Deer. The Southern Alberta Cancer Program is offered through the Tom Baker Cancer Centre in Calgary and through associated clinics in Lethbridge and Medicine Hat.

The Government of Alberta funds the Alberta Cancer Board, basing its annual funding on government fiscal policies and on Alberta Cancer Board budgets which are submitted annually. The Alberta Cancer Board also receives support for research and education from the Alberta Heritage Savings Trust Fund, Alberta Heritage Foundation for Medical Research, the Universities of Alberta and Calgary, industry, and national and international research granting agencies.

The Board generates some revenue from the treatment of out-of-province patients and from other incidentals, while corporations, community groups and individuals offer support through the Alberta Cancer Foundation which handles charitable donations given to the Alberta Cancer Board.

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Alberta Cancer Registry
1988 Annual Report

Dr. J. Berkel, M.D., Ph.D., F.R.C.P.(NL),
Director
Division of Epidemiology & Preventive Oncology

ALBERTA CANCER BOARD

December 1990

Acknowledgements

The publication of an annual report is more than just a regular ritual. It forces everyone over and over again to be critical of what has been done. A report like this also does not just develop by itself, it is the result of hard, conscientious work of many people across the province.

Thanks go to all the clinicians and pathologists for their collaboration and willingness to answer requests for more information. I wish also to acknowledge the continuing help we have received from Vital Statistics Alberta in obtaining information on (causes of) death of the patients registered in our database.

Any data-collection is subject to the iron rule "garbage-in-garbage-out". The registry staff members who made sure that no "garbage" came in, deserve a special thank you for their dedication and diligence in the daily collection of the data items. Thanks to Bill Anderson and Andrew MacMillan, we are able to present the data in (what we hope is) a readable format. Finally a special thank you to my secretary, Ms. Marilyn Spencer, who typed the different versions of the report with a smile.

December 1990, Edmonton

Dr. J. Berkel, M.D., Ph.D., F.R.C.P. (NL)

LOOK TO YOUR HEALTH;
AND IF YOU HAVE IT PRAISE GOD
AND VALUE IT NEXT TO A GOOD CONSCIENCE;
FOR HEALTH IS THE SECOND BLESSING
THAT WE MORTALS ARE CAPABLE OF;
A BLESSING THAT MONEY CANNOT BUY.

ISAAK WALTON (1593-1683)
IN: *THE COMPLETE ANGLER* (1653)

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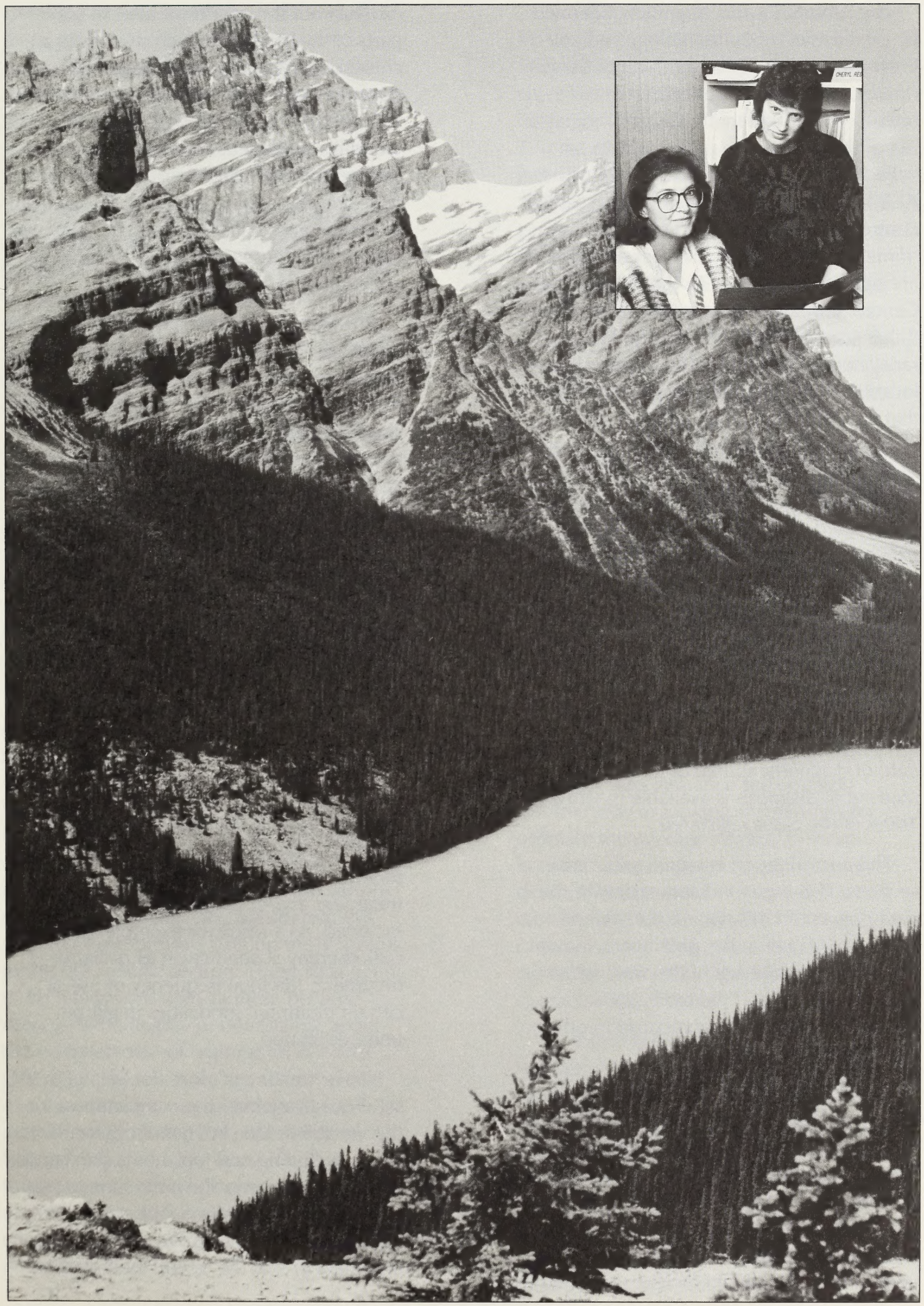
Introduction



Introduction

The Alberta Cancer Registry is operated by the Division of Epidemiology and Preventive Oncology of the Alberta Cancer Board (ACB). It is a population-based registry embedded in the Cancer Programs Act of the province of Alberta. Data are collected both actively and passively. The ACB has the mandate to coordinate cancer control activities in the province. In that framework two tertiary cancer care facilities are operated by the ACB; the W.W. Cross Cancer Hospital in Edmonton and the Tom Baker Cancer Centre in Calgary. The two radiotherapy facilities in the province are located in these facilities. From all patients that are seen in the ACB patient care facilities, data are actively gathered, *ie* the patient-chart is abstracted. However, not all cancer patients in Alberta are diagnosed and treated in ACB facilities. For these patients the registry data are gathered passively, *ie* requested from the attending physician and/or hospital. This sometimes results in delays in entering data and leads sometimes to incomplete data for certain clinical variables. The core dataset, however, which consists of the variables name, topography, morphology, date of birth, sex, date of diagnosis, source of information and method of diagnosis is available in virtually 100% of the cases registered.

The annual report is organized in two sections. First a provincial overview of the data is given. In this section the general picture of cancer in the province is shown. The relative frequency of the various tumor sites is depicted and the total cancer incidence in Alberta is compared to other countries in the world.

The second section contains the 1988 data for individual sites. For each site the incidence, the histology, the mortality (including the case-fatality rate), the prevalence, the treatment pattern and the survival is described. For most sites, a comparison is shown of the age-standardized (world population) incidence rate in Alberta with the incidence rates in other parts of the world. Twelve other areas are chosen, representing the different continents and different ethnic groups. In the text, the highest and lowest rate in the world is mentioned. For each tumor site, the age-specific incidence and mortality rates are displayed graphically. To calculate mortality rates, cause-specific mortality was used. Using these data, the prevalence of each tumor is described.

Prevalence data raise an interesting question: "when does one consider a patient to be cured?" Or in other words, for how long a period of time after the diagnosis, does someone remain a cancer patient, thereby contributing to the prevalence of cancer? This is of importance particularly for "nonagressive" tumors like non-melanoma skin cancer, or in-situ tumors. We decided not to attempt to give an answer to this question. Therefore in the prevalence data all patients alive medio 1988 are included, whether the tumor was diagnosed 15 years or 6 months before. This results in a slight over-estimation of the impact on the health care system.

Information about the frequency of various treatment modalities is shown for each site as well. Treatment is defined as "initial treatment given within 3 months of the date of diagnosis." No additional treatment and/or palliative treatment is included. As a result for example, since radiotherapy is often given as palliative treatment, the total frequency of use of certain treatment modalities might be underestimated.

Since "treatment" does not belong to the set of core variables, the completeness for this variable is less. In 16% of the incident cases, excluding non-melanoma skin cancer (NMSC), no information on treatment was available in the database. This means that either the patient has indeed received no treatment or that the treatment that was given was unknown. We have treated all these patients as having received no treatment. The relative frequency of "no treatment" varies greatly between different sites: for melanoma treatment was given to all patients, while for primary liver tumors no treatment was given to 79% of the patients.

An international comparison is shown for almost every site; the age-standardized incidence rate (world population) for 1988 in Alberta is compared with similar rates from the IARC-publication Cancer Incidence in Five Continents (Vol. V). It has to be realized that the IARC data represent incidence patterns during the period 1978–1982, while the Alberta data in this annual report reflect incidence in 1988.

It is important to put the data that are presented in perspective: How valid and reliable are the data? How complete is the cancer registry? Are there limitations to the data? Some of the potential problems have been mentioned already but a few other comments still need to be made.

In most calculations non-melanoma skin cancers (NMSC) are excluded. Although in-sensu-strictu these are malignant tumors, clinically these tumors behave almost like a benign lesion. Including them in calculations of incidence rates would dominate these and create a wrong impression. In determining the rank orders for the various sites NMSCs are also not considered. We did, however, provide data on these tumors in the site specific section. These data need to be interpreted with caution, because there is some degree of uncertainty about the completeness of registration of NMSC. Often the physicians do not send material of such a tumor in for pathological confirmation, after treating the patient in their (private) office. It is not feasible to trace all these patients, although physicians are encouraged to report all cases, both the clinically suspected and the pathologically confirmed cases.

The completeness of the cancer registry in Alberta has been estimated to exceed 95%, as illustrated by only 2% of the total cases being registered because of information from "death certificates only" (DCO). This percentage varies, however, for individual sites. The highest proportion of "DCO-cases" (20%) occurred in pancreas cancer, followed by primary liver cancers (16% DCO). In some instances after receiving notification of a tumor via Vital Statistics, additional information can be obtained from the attending physician. Whether or not this is the case, all DCO-cases are included in the incidence calculations.

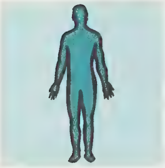
Survival data are mentioned as the one-year cause-specific survival. To calculate these data, we used the cohort of all patients diagnosed in 1988. For each patient it was determined whether he/she was alive one year after the date of diagnosis. If the patient was found to be deceased, the cause of death was determined and 1-year relative survival estimated. This measure can be used as a surrogate for the agressiveness of the disease, although other factors, such as stage of the disease at diagnosis, also influence the outcome. Another way of looking at survival is to estimate the average number of years between date of diagnosis and date of death. We calculated this measure for all cancer patients who died in 1988 because of their cancer. This measure might be of particular interest to clinicians in their contacts with patients.

To estimate the impact of the disease, we calculated the case-fatality rate. This measure is defined as the proportion of cases which are fatal within a specified time. In this report the case-fatality rate is estimated by dividing the number of deaths from a tumor in 1988, by the number of incident cases of that tumor in 1988. This calculation sometimes leads to the paradox that more patients died from a given tumor than were diagnosed with that tumor (*ie* the case-fatality rate exceeds 100%). This is due to the fact that some patients diagnosed in previous years, died in the current year. Assuming complete data on incidence and mortality, however, the case-fatality rate is a useful index.

In the appendices, tables with the actual number of incident cases and the incidence rate by (5-year) age-group and sex for each individual site, as well as the actual number of deceased persons and the mortality rate are provided. Also, the age-and sex-distribution of the 1988 Alberta population is shown.

Provincial Overview

Provincial Overview



Introduction

In 1988, 10,024 Albertans (4906 males and 5118 females) were diagnosed with cancer. A total of 1839 males and 1530 females died from their cancer in this year, which means that cancer accounted for 25% of all deaths during 1988 in Alberta. Apart from the number of newly diagnosed patients (incidence), and the number of deceased patients (mortality), the number of patients known to be alive with cancer (prevalence) gives an indication of the cancer burden in the population and the impact of cancer on health care resources. Medio 1988, a total of 29,354 Albertans (10,274 males and 19,080 females) were alive, having been diagnosed at some point in time, with cancer of one form or another. This is about 1% of all males and 1.6% of all females in Alberta. However, a large proportion of these prevalent patients consists of patients with non-melanoma skin cancer and cervical carcinoma in-situ. When these lesions were not included, the total number of cancer patients alive was 15,490 (9,470 females and 6,020 males).

Age

In general, age is the single most important risk indicator for cancer: the number of tumors diagnosed increase dramatically with increasing age (Table I, figure 1). The same is true for the prevalence (Table I). The relative frequency increases with age in all three parameters, however the proportion of older people was highest among the deceased patients (Table I, figure 2). Childhood cancers occur relatively infrequently, with only 0.7% of all tumors occurring before age 15.

☐ Table I – Number of newly diagnosed, prevalent and deceased patients by age (Alberta, 1988)

Incidence

Age at Diagnosis	*All*		*Excl. NMSC*	
<15	68	(0.7%)	66	(0.9%)
15–39	1,116	(11.1%)	896	(12.5%)
40–64	3,617	(36.1%)	2,534	(35.3%)
≥65	5,223	(52.1%)	3,678	(51.3%)
Total	10,024		7,174	

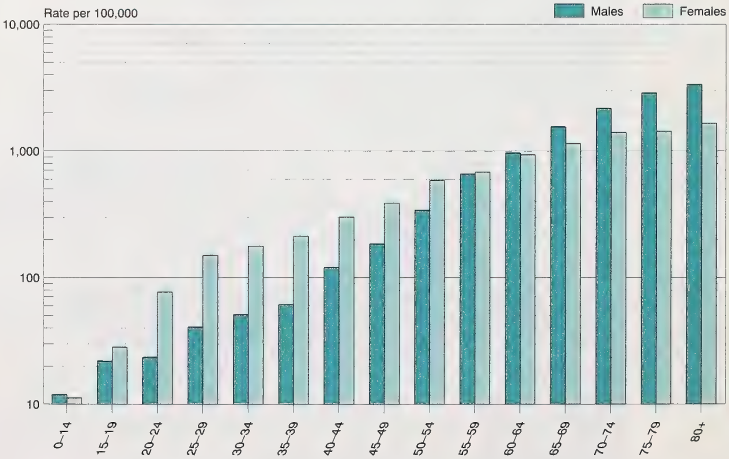
Prevalence

Age at Diagnosis	*All*		*Excl. NMSC*	
<15	112	(0.4%)	110	(0.5%)
15–39	3,486	(11.9%)	3,239	(15.3%)
40–64	10,862	(37.0%)	8,441	(39.9%)
≥65	14,894	(50.7%)	9.374	(44.3%)
Total	29,354		21,164	

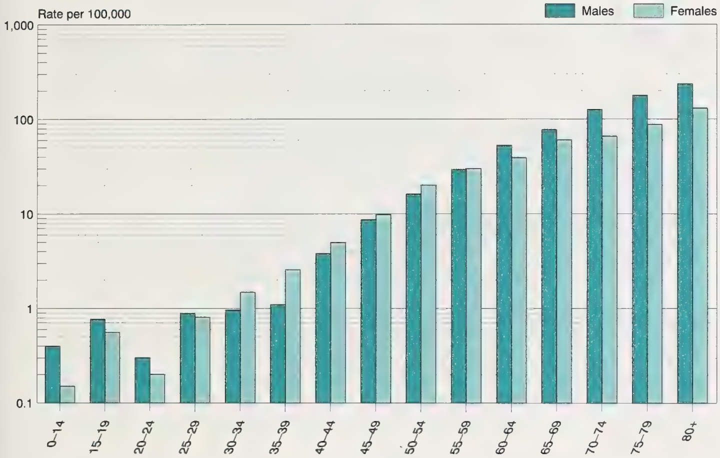
Mortality

Age at Diagnosis	*All*		*Case-Fatality Rate*
<15	16	(0.5%)	24.2%
15–39	69	(2.0%)	7.7%
40–64	1,055	(31.3%)	41.6%
≥65	2,229	(66.2%)	60.6%
Total	3,369		

☐ Figure 1 – Incidence



☐ Figure 2 – Mortality



☐ Table II – Age-standardized (world population) sex and site specific incidence rates per 100,000 (Alberta, 1988)

Site	*Males*	*Females*
Head and Neck	13.7	4.6
Esophagus	3.1	0.7
Stomach	8.0	3.2
Colon	28.7	17.8
Rectum	10.5	5.0
Liver	2.6	0.7
Gallbladder/Bilary Tract	1.3	2.2
Pancreas	8.3	4.7
Other Digestive Tract	1.8	1.9
Larynx	4.9	1.3
Lung	48.9	24.1
Bone/Connective Tissue	2.6	3.1
Melanoma	7.4	9.3
Non-Melanoma Skin Cancer	118.0	92.3
Breast (female)	-	79.8
Cervix (invasive)	-	8.0
Cervix (in situ)	-	33.3
Endometrium	-	17.0
Ovary	-	10.7
Other Female Genital Tract	-	4.1
Testis	3.9	-
Prostate	48.9	-
Bladder	15.9	5.1
Kidney	10.9	5.2
Nervous System	6.2	4.4
Thyroid	2.3	4.4
Non-Hodgkin Lymphoma	10.8	8.3
Hodgkin's Disease	2.9	2.1
Leukemia	7.3	5.2
Unknown Primary	10.0	6.3
Other Sites	8.3	3.6
All Sites	387.2	368.4
All Sites excl. NMSC	269.2	276.1
Non-sex specific sites (excl. NMSC)	216.4	123.2

In Table I, the case-fatality rate by age is shown as well. The case-fatality rate is highest in the oldest age group. The explanation can probably be found in the fact that the prognosis for tumors occurring predominantly in older age (lung, pancreas) is very much less favourable, compared to the one for tumors occurring in younger age (testis, cervix, Hodgkin's disease).

Sex

The absolute number of tumors diagnosed in females (5118) was larger than in males (4906). When the sex-specific sites are excluded (*ie* breast and genital tract cancers for females and tumors of the prostate, testis and penis for males), the overall (excl. NMSC) age-standardized (world population) incidence rate however, was higher for males (216 per 100,000) than for females (123 per 100,000). In Table II the provincial age-standardized incidence rates (by sex) are given for the site discussed in the site-specific section.

Incidence

In 1988, the age-standardized (world population) incidence rate for all sites combined was 387 per 100,000 for males and 368 per 100,000 for females (Table II). The age-specific incidence rates for most sites separately are presented in the site specific section (Section III). In the appendices the numbers and rates for all individual ICD-9 (3-digit codes) sites are presented.

Mortality

The age-standardized mortality rate for all cancers combined was 142 per 100,000 for males and 104 per 100,000 for females. Age-specific mortality rates for most sites are presented in the site specific section.

The highest mortality rate for females occurred in breast cancer (25.3 per 100,000) followed by lung cancer (16.0 per 100,000). For males the highest mortality rates were for lung cancer (41.6 per 100,000) followed by prostate cancer (15.4 per 100,000). Case-fatality rates for individual sites are shown in Table III.

Most Frequent Sites

Although in-situ tumors and non-melanoma skin cancers (*ie* basal cell and squamous skin carcinomas) were the most frequently diagnosed cancers in Alberta, they represent a minor problem in terms of mortality. For this reason they have been excluded from Figures 5a and 5b which show the relative frequency of various tumors for males and females, both in terms of incidence and mortality.

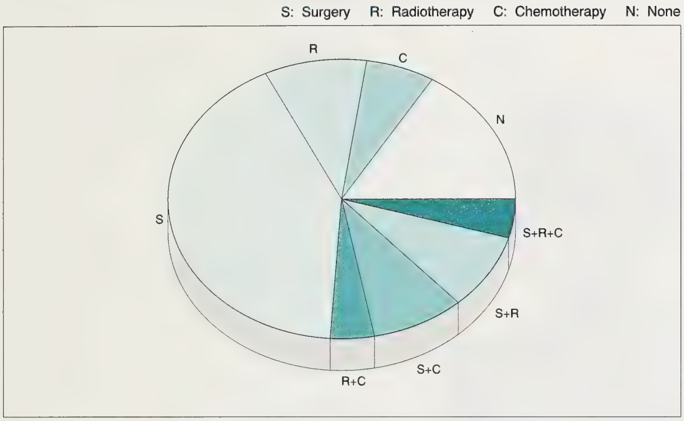
In total, males and females combined, the most frequently diagnosed cancer was breast cancer, representing 16% of all newly diagnosed tumors. Second ranked cancers of the lung (14% of all new tumors) and in third place were cancers of the prostate (10% of all new tumors). Colon cancers were fourth overall, representing 10% of all newly diagnosed tumors.

The most frequent cancer causing death was lung cancer, which was responsible for 22% of all cancer mortality. Second ranked breast cancer (10%) and in third place were colon tumors (9%), followed by the combined haematological neoplasms (8%). The difference in rank orders between incidence and mortality reflects the "aggressiveness" and/or curability of the disease. Extreme examples are non-melanoma skin cancer for which 2850 cases were diagnosed while only 7 patients died of this cancer in 1988. Conversely, 924 cases of lung cancer were diagnosed and 751 deaths due to lung cancer were reported in 1988.

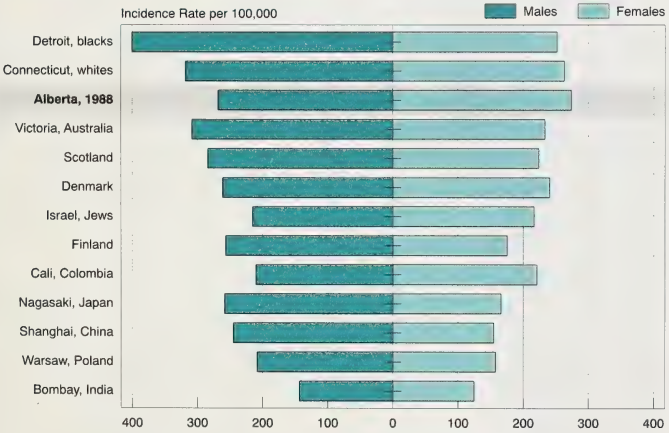
☐ Table III – Case-fatality rate for individual cancer sites (males and females combined) in Alberta, 1998

Site	*Number of Incident Cases*	*Number of Deceased Cases*	*Case-Fatality Rate (%)*
Head and Neck	239	86	36
Esophagus	47	34	72
Stomach	155	141	91
Colon	635	303	48
Rectum	203	122	60
Liver	43	49	114
Gallbladder/Biliary Tract	52	53	102
Pancreas	181	185	102
Other Digestive Tract	57	48	84
Larynx	74	23	31
Lung	924	751	81
Bone/Connective Tissue	73	32	44
Melanoma	171	23	10
Non-Melanoma Skin	2850	7	0.3
Breast (female)	1040	347	33
Cervix (invasive)	104	31	30
Cervix in-situ	490	0	-
Endometrium	216	27	13
Ovary	143	89	62
Other Female Genital Tract	56	11	20
Testis	58	0	-
Prostate	656	220	34
Bladder	277	72	26
Kidney	205	80	39
Nervous System	134	90	67
Thyroid	84	6	7
Non-Hodgkin Lymphoma	248	124	50
Hodgkin's Disease	66	5	8
Leukemia	160	137	86
Unknown Primary	229	172	75
Other	154	101	66
All Sites	10024	3369	34
All sites excl NMSC	7174	3362	47

☐ **Figure 3 – Method of Treatment**



☐ **Figure 4 – International Comparison**



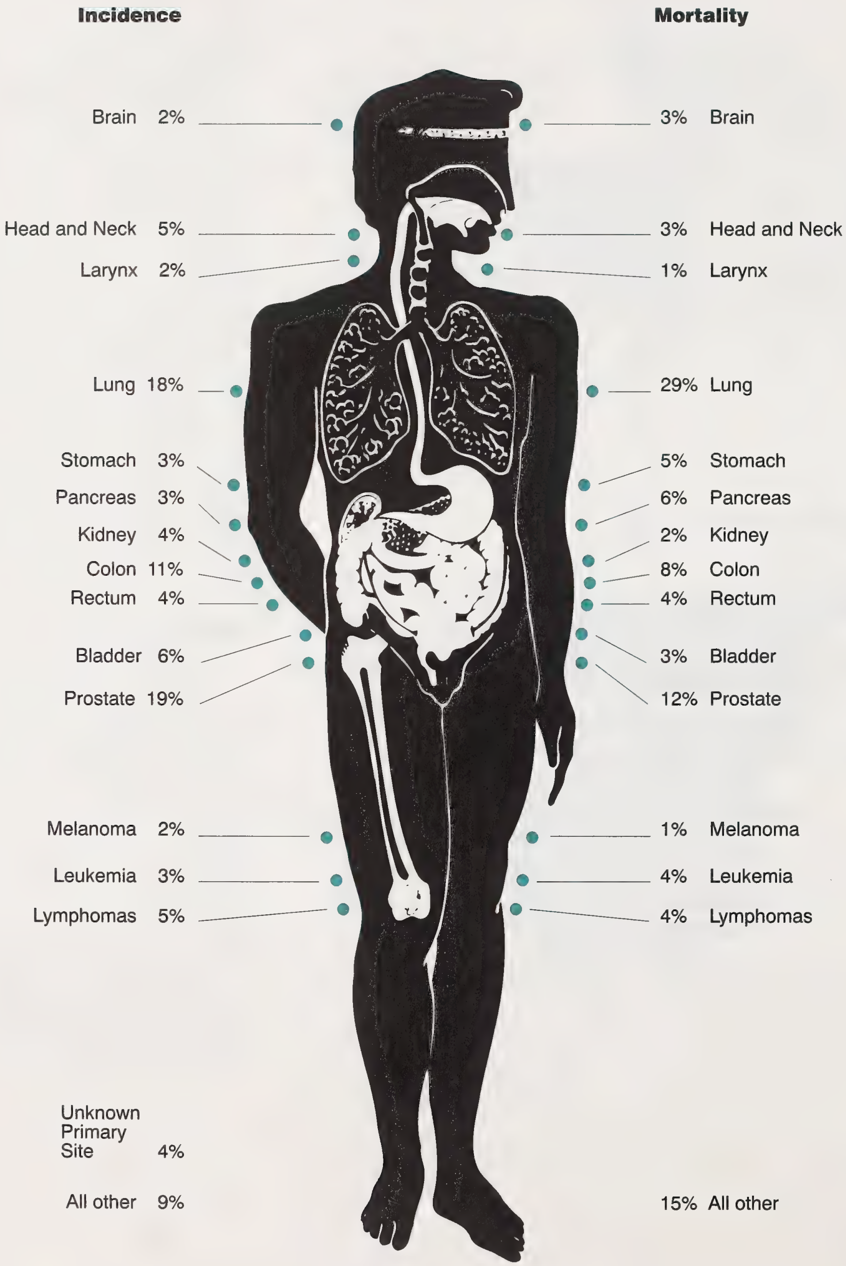
Method of Treatment

Since 96% of all non-melanoma skin cancers were treated by surgery alone, these tumors were excluded from the analyses. The treatment categories considered were surgery, radiotherapy, and chemotherapy, as well as the various combinations of these. A total of 64% of all patients received surgery either alone or in combination with other treatment modalities. Radiotherapy was given in one form or another to 27% of the patients. A total of 26% of the patients received some form of multi-modality treatment. Chemotherapy alone was given to 6% of the patients and in combination with other treatments to another 17% of the patients. In 1175 patients (16%), none of these three treatment modalities, either alone or in combination, were used. However, it is likely that in fact several of these patients did receive treatment, of which the registry was not aware.

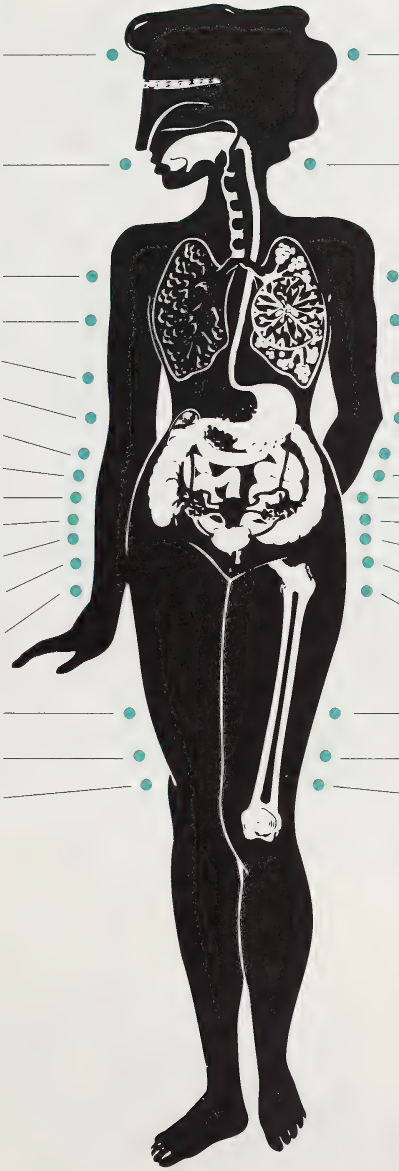
International Comparison

In figure 4, the total age standardized (world population) incidence rate (excl. NMSC) for males and females in Alberta in 1988 is shown compared to similar rates around the world. The incidence rate for females in Alberta (276.1) is among the highest in the world. The highest incidence in females is found in Pacific Polynesian Islanders (353.7), the lowest in Kuwaitis (72.0). The incidence rate for Alberta males (269.2), although high, ranks in the middle range. The highest incidence in males is found in blacks in Detroit, USA (400.1), the lowest in Kuwaitis (71.9).

Figure 5a – Relative frequency of individual sites (incidence/mortality) in males (Alberta, 1988)



☐ Figure 5b – Relative frequency of individual sites (incidence/mortality) in females (Alberta, 1988)



Incidence		Mortality	
Brain	2%	3%	Brain
Head and Neck	2%	2%	Head and Neck
Breast	32%	23%	Breast
Lung	10%	15%	Lung
Stomach	2%	3%	Stomach
Pancreas	2%	5%	Pancreas
Kidney	2%	3%	Kidney
Colon	9%	10%	Colon
Rectum	2%	3%	Rectum
Ovary	4%	6%	Ovary
Cervix	3%	2%	Cervix
Endometrium	7%	2%	Endometrium
Bladder	2%	1%	Bladder
Melanoma	3%	0.6%	Melanoma
Leukemia	2%	4%	Leukemia
Lymphomas	4%	4%	Lymphomas
All other	14%	14%	All other

Individual Sites

Head and Neck Cancer

Introduction

The etiology of cancers in this group is strongly related to the consumption of alcohol and to cigarette smoking. In Asian countries an association with betel nut chewing has been found.

In terms of new cases, head and neck cancers ranked 5th most common for males and 15th for females. In terms of mortality, these cancers ranked 11th highest for males and 17th for females.

Incidence

In 1988, a total of 239 head and neck cancers were diagnosed. Of these, 172 occurred in males (72%) and 67 in females (28%). The age-specific incidence rate is shown in the figure. The total incidence rate was 14.3 per 100,000 for males and 5.6 per 100,000 for females.

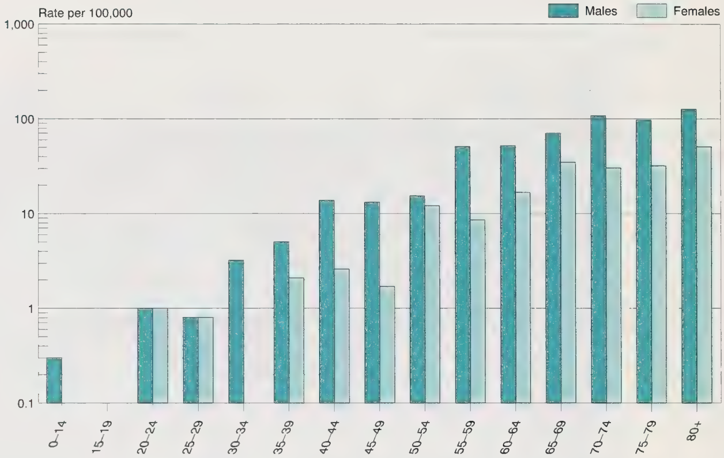
Histology

Most head and neck cancers were squamous cell carcinomas (84%). Only 3% was an adenocarcinoma and a similar percentage was diagnosed as adenoid-cystic carcinoma.

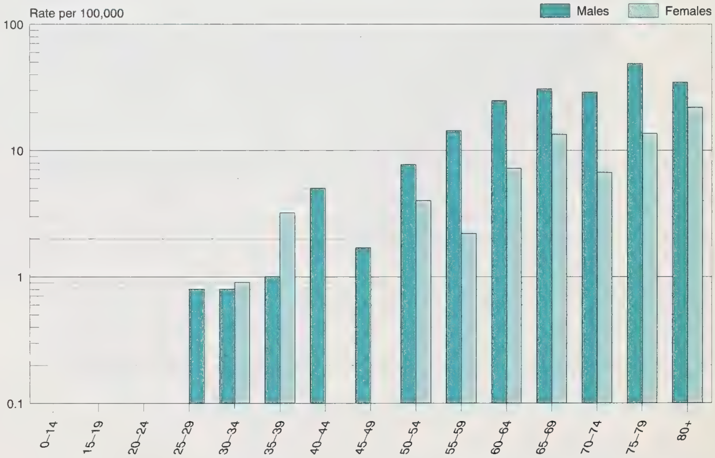
Mortality

These tumors accounted for 86 deaths (59 in males and 27 in females). This was 3% of all cancer deaths. The mortality rate was 4.9 per 100,000 for males and 2.3 per 100,000 for females. Overall the case-fatality rate was 36%, with no apparent difference between males and females.

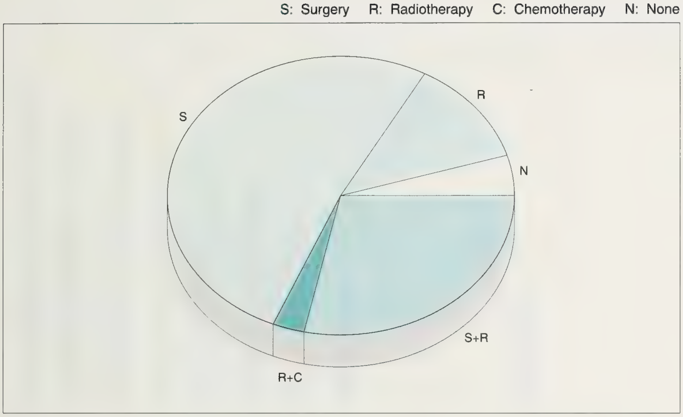
☐ Incidence



☐ Mortality



☐ Method of Treatment



Prevalence

At the mid-point of 1988, the prevalence of head and neck cancers was 1203 (1002 males and 201 females). This was 6% of all prevalent tumors in Alberta (excluding nonmelanoma skin cancer).

Treatment

Most patients were treated by surgery alone (51%), another 28% received a combination of radiotherapy and surgery. Chemotherapy, either alone or in combination with surgery and/or radiotherapy, was given to 4% of patients.

Survival

Amongst those persons who died due to head and neck cancer during 1988, the mean number of years survived from the time of diagnosis to death was 3.7 for males and 2.8 for females. The one-year survival for patients diagnosed in 1988 was 84% in females and 91% in males.

Esophagus Cancer

Introduction

Esophageal cancer is strongly related to cigarette smoking, while alcohol consumption acts synergistically with the effects of smoking. Nutritional deficiencies and occupational risk factors may also play a role.

For females, esophagus cancer was the least commonly occurring cancer and for males it was the fifth least common. In terms of mortality, these cancers ranked ninth lowest for males and third lowest for females.

Incidence

In 1988, a total of 47 cancers of the esophagus were diagnosed. Of these 38, occurred in males (81%) and 9 in females (19%). The age-specific incidence rates are given in the figure. Esophagus cancer is a disease occurring predominantly in middle aged and older men. The total incidence rate for males was 3.2 per 100,000 and for females 0.8 per 100,000.

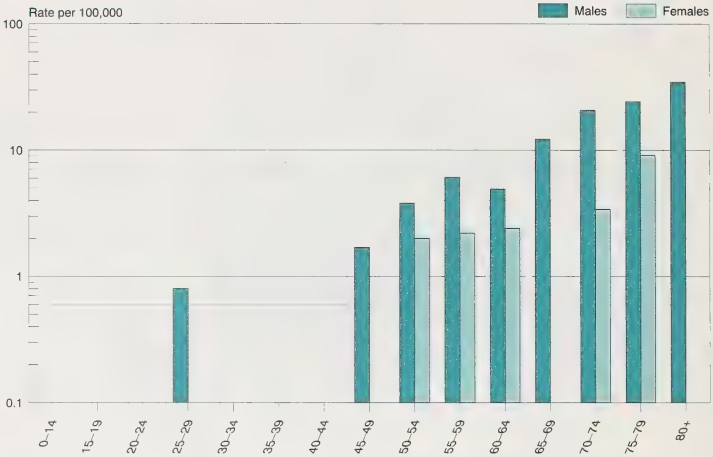
Histology

The majority of the cases were squamous cell carcinomas (53%), however many were diagnosed as adenocarcinoma (40%).

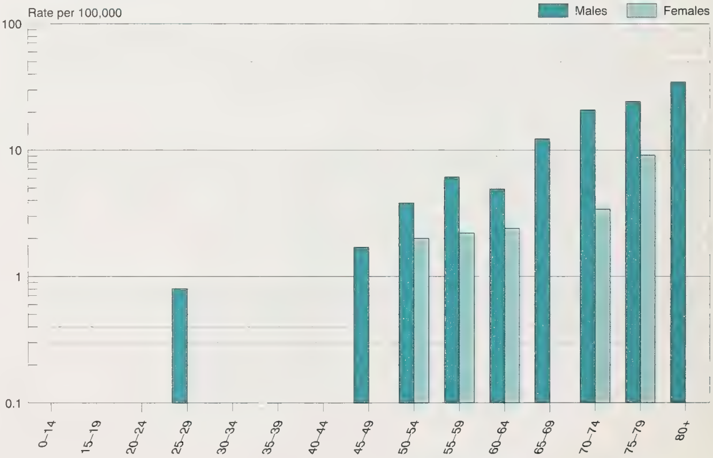
Mortality

Esophageal cancers accounted for 1% of all cancer deaths in 1988; 28 males and 6 females died of this cancer. The mortality rate was 2.3 per 100,000 for males and 0.5 per 100,000 for females. The case fatality rate in 1988 was 72%.

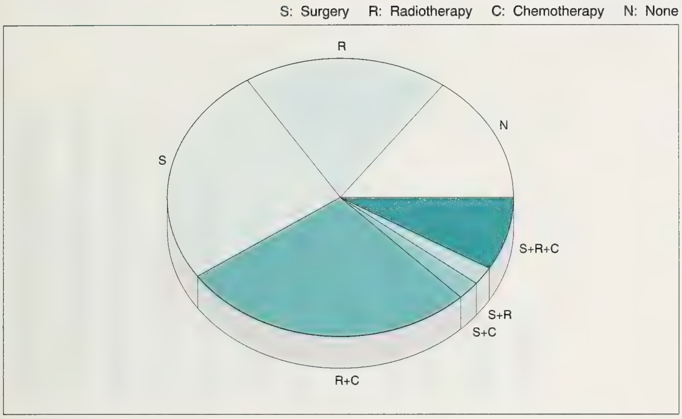
☐ **Incidence**



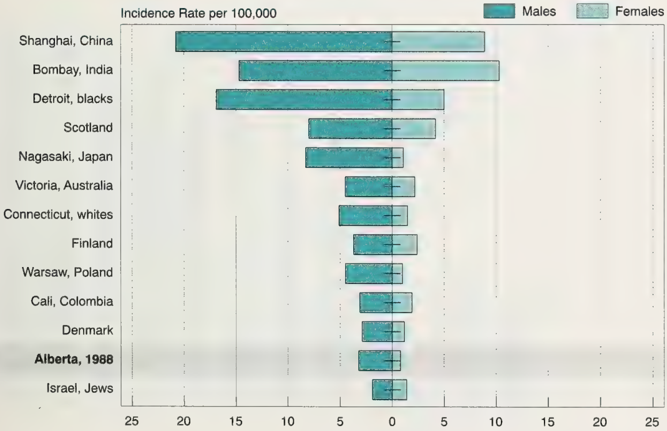
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 19 patients were alive with an esophageal cancer, which was 0.1% of all prevalent cases (excluding nonmelanoma skin cancer). This low figure indicates the high fatality rate of these tumors.

Treatment

Many patients were treated by either surgery alone (26%) or radiotherapy alone (19%). About 40% of patients received some form of treatment combination.

Survival

Amongst persons who died of esophagus cancer in 1988, the average number of years survived after diagnosis was 2.1 for females and 1.7 for males. The one year relative survival for patients diagnosed in 1988 was 56% in females and 47% in males.

International Comparison

Esophageal cancer rates in Alberta belong to the lowest in the world. The highest incidence rates for esophageal cancer in males are found in France (rural Calvados: $35.6/10^5$) and the lowest rate in males occurs in non-Jews in Israel ($1.0/10^5$). The highest rate in females was found in Poona, India ($12.4/10^5$), the lowest rates are in Eastern Europe (Szabolcs/Hungary; ($0.1/10^5$).

Stomach Cancer

Introduction

The incidence of stomach cancer is declining in Alberta, as in the rest of the world. Diet seems to play a major role in the etiology of stomach cancer.

For males stomach cancer incidence ranked 11th, while for females it ranked 18th. In terms of mortality, stomach cancer was 5th highest for males and 9th highest for females.

Incidence

In 1988, a total of 155 cancers of the stomach were newly diagnosed. Of these, 105 occurred in males (68%) and 50 in females (32%), which resulted in incidence rates of 8.7 per 100,000 and 4.2 per 100,000 for males and females respectively. Age-specific incidence rates are shown in the figure.

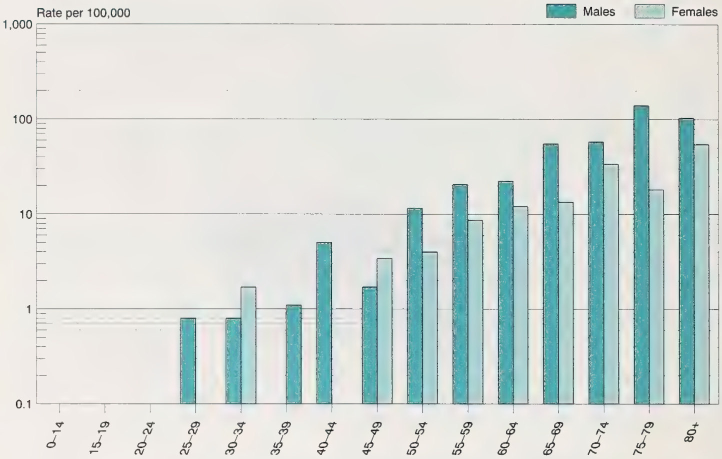
Histology

The majority of stomach cancers were adenocarcinomas (75%), and another 11% were described as "carcinoma" only. In 6 patients a linitis plastica was diagnosed.

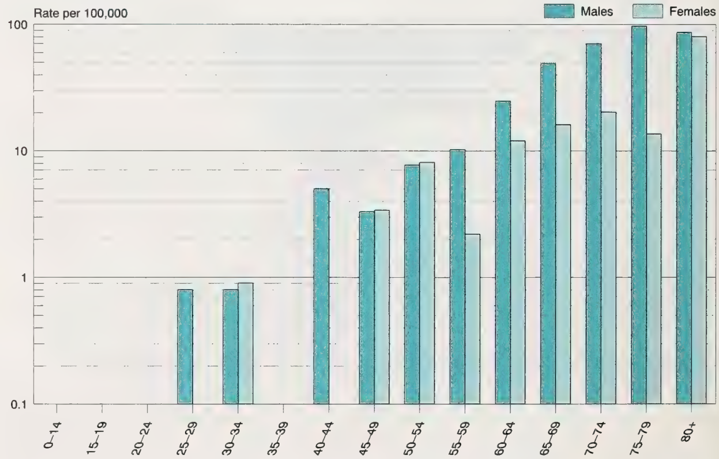
Mortality

Stomach cancers accounted for 4% of all cancer deaths in 1988. A total of 141 patients died of this cancer (50 females and 91 males) which resulted in a mortality rate of 7.5 per 100,000 for males and 4.2 per 100,000 for females. The case fatality rate was 91%.

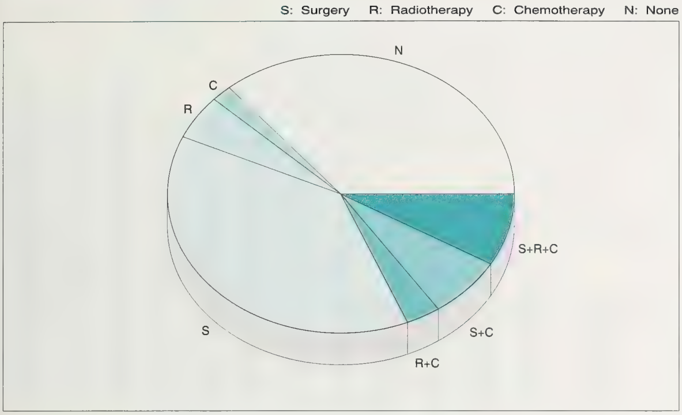
☐ Incidence



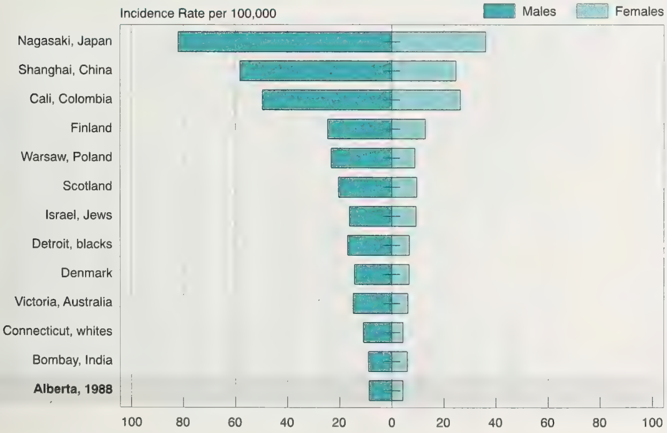
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 191 patients (117 males and 74 females) were alive with stomach cancer, which was 1% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

About 1/3 of the cases received no treatment at all (or the treatment was unknown to the registry). Of the remainder, the majority (84%) was treated with surgery, either alone or in combination. Radiotherapy and/or chemotherapy were only used in a minority of the cases.

Survival

Among persons who died of stomach cancer in 1988, the average survival time after diagnosis was 2.4 years for females and 3 years for males. The one-year relative survival for patients diagnosed in 1988 was 46% in males and 49% in females.

International Comparison

Stomach cancer rates in Alberta are among the lowest in the world. The highest rates both in females and in males ($36.1/10^5$ and $82.0/10^5$ respectively) are found in Japan (Nagasaki). The lowest incidence rates for stomach cancer exist in Kuwaitis ($3.7/10^5$ in males and $1.6/10^5$ in females).

Colon Cancer

Introduction

Colon cancer is the most frequent malignant tumor of the gastro-intestinal tract. Dietary factors (consumption of fat, fiber, micronutrients) play a major role in the etiology of these tumors.

Colon cancer ranked as the third most commonly occurring cancer for both males and females. Mortality rates for colon cancer ranked the third highest for both genders.

Incidence

In 1988, a total of 635 cancers of the colon were newly diagnosed, 276 in females (43%) and 359 in males (57%). The incidence rate was 29.8 per 100,000 for males and 23.2 per 100,000 for females. Age-specific incidence rates are shown in the figure.

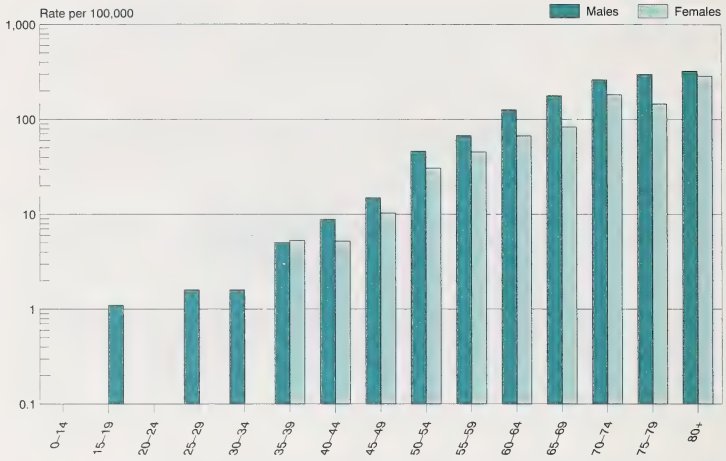
Histology

Over 90% of all colon cancers were adenocarcinomas. Seven patients were diagnosed with a carcinoid tumor of the colon.

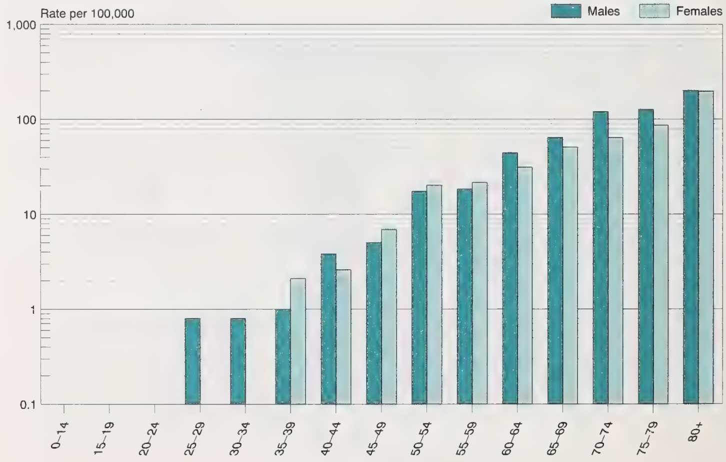
Mortality

Colon cancers accounted for 9% of all cancer deaths in Alberta during 1988 (excluding nonmelanoma skin cancer). A total of 303 patients died of this tumor (152 females and 151 males). This accounted for a mortality rate of 12.5 per 100,000 for males and 12.8 per 100,000 for females. The case-fatality rate was 48%.

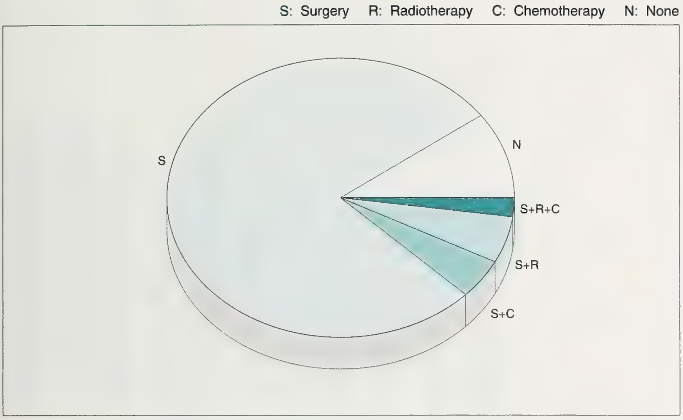
☐ **Incidence**



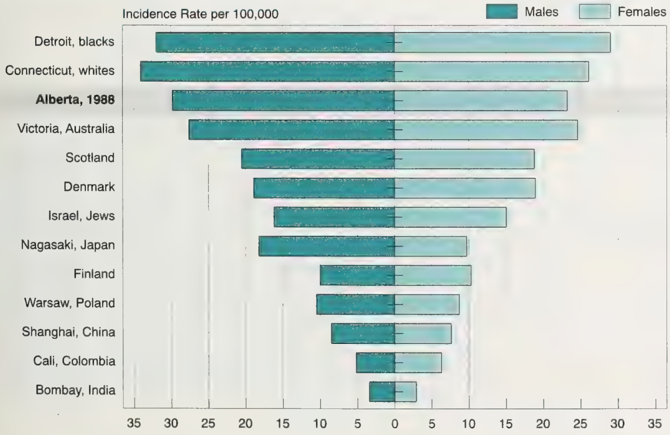
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 1432 patients (610 males and 822 females) were alive with colon cancer, which was 7% of all prevalent cases.

Treatment

Surgery alone was used in the treatment of 77% of patients diagnosed in 1988. Another 12% of patients received surgery in combination with either radiotherapy or chemotherapy. The use of radiotherapy or chemotherapy alone was uncommon. 10% of patients received none of these three treatment modalities.

Survival

Amongst persons who died of colon cancer in 1988, males survived an average of 2.6 years after the diagnosis while for females this was 3.1 years. The overall one-year relative survival for patients diagnosed with colon cancer in 1988 was 76% for females and 79% in males.

International Comparison

Colon cancer rates in Alberta are among the highest in the world. However, we included the rectosigmoid region of the colon (ICD9=154.0) with the colon cancers, other registries did not. The highest incidence rate in males occurred in Connecticut-whites (USA), the lowest in Kuwaitis (respectively 34.1/10^5 and 0.2/10^5). The range for females was from 29.0/10^5 (in blacks in Detroit) to 0.8/10^5 (in Kuwaitis).

Rectum Cancer

Introduction

Rectum cancer is the second most frequent malignant tumor of the gastrointestinal tract. The risk factors for rectum cancers resemble those for colon tumors, although there are differences.

Rectum cancer ranked eighth most frequently occurring for males and twelfth for females. In terms of mortality, cancer of the rectum ranked seventh highest for males and tenth highest for females.

Incidence

In 1988, a total of 203 malignant tumors of the rectum were diagnosed: 131 in males (65%) and 72 in females (35%). The incidence rate was 10.9 per 100,000 for males and 6.0 per 100,000 for females. Age-specific incidence rates are shown in the figure.

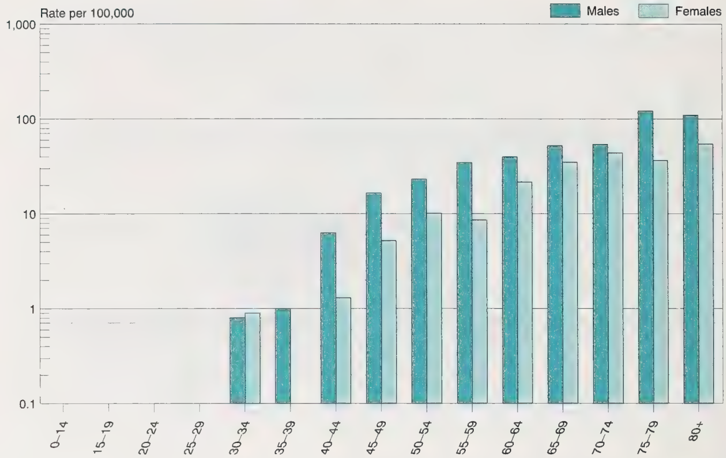
Histology

The majority of rectal cancers were adenocarcinomas (90%). Two cases of malignant melanoma occurred in the rectum.

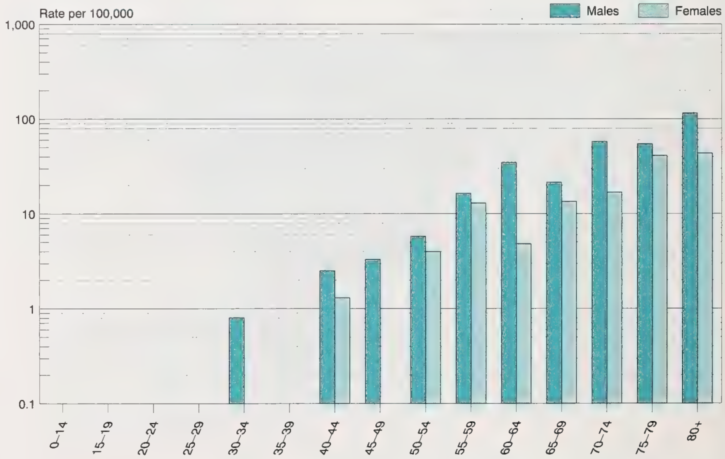
Mortality

A total of 122 patients (80 males and 42 females) died because of this tumor. This accounted for 3% of all cancer deaths in Alberta during 1988. The mortality rate was 6.6 per 100,000 for males and 3.5 per 100,000 for females. The case-fatality rate was 60%.

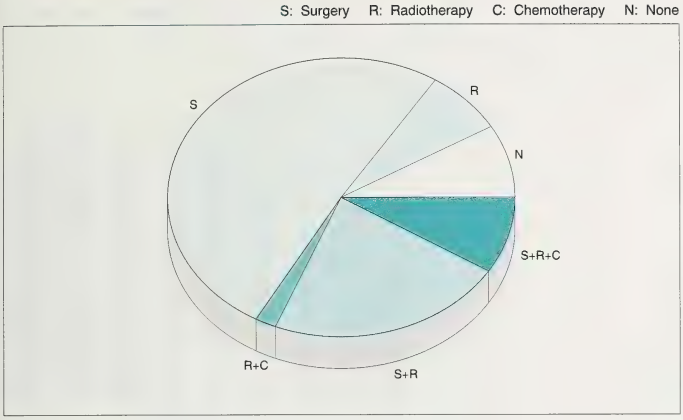
Incidence



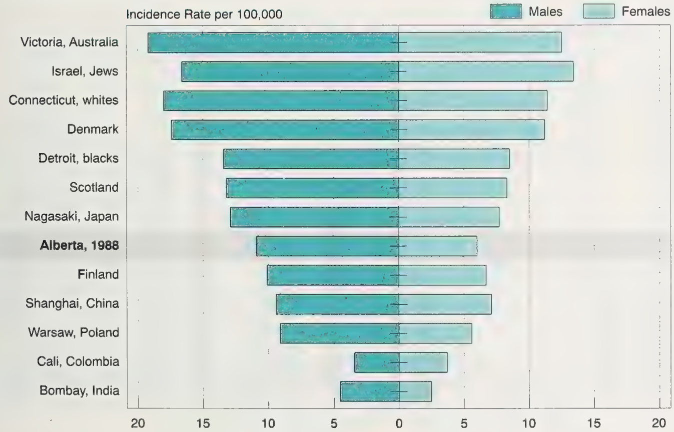
Mortality



☐ Method of Treatment



☐ International Comparison



Prevalence

A total of 528 patients were alive with rectal cancer at the mid-point of 1988. This was 3% of all prevalent cancer cases.

Treatment

As in colon cancer, most patients (82%) were treated with surgical intervention. About one-third of patients received radiotherapy as well, it is not known whether this was pre-operative or in an adjuvant setting. Chemotherapy played a minor role: only 11% of patients received chemotherapy and this was always in combination with other treatment modalities.

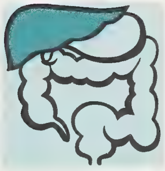
Survival

Amongst persons who died of rectal cancer in 1988, the average survival from the time of diagnosis was 3.6 years for males and 5.1 years for females. The one-year relative survival for patients diagnosed in 1988 was 80% in males and 84% in females.

International Comparison

Rectum cancer rates in Alberta are in the middle range in the world. The range in incidence in males varies from $3.0/10^5$ (in Madras, India and in Kuwaitis) to $22.6/10^5$ (in European/American born Jews in Israel). In females the highest rate occurred also in European/American born Jews in Israel ($15.9/10^5$), while the lowest rate exists in Madras, India ($1.3/10^5$).

Liver Cancer



Introduction

Liver cancers are rather rare tumors in Alberta. The risk factors for liver cancer include exposure to chemicals and chronic hepatitis B infection.

Liver cancer ranked third least frequent for males and second least frequent for females. Its mortality rates were tenth lowest for males and eighth lowest for females.

Incidence

Only 43 new patients with a primary malignant liver tumor were diagnosed in 1988 (31 in males and 12 in females). This resulted in an incidence rate of 2.6 per 100,000 for males and 1.0 per 100,000 for females. Age-specific incidence rates are shown in the figure.

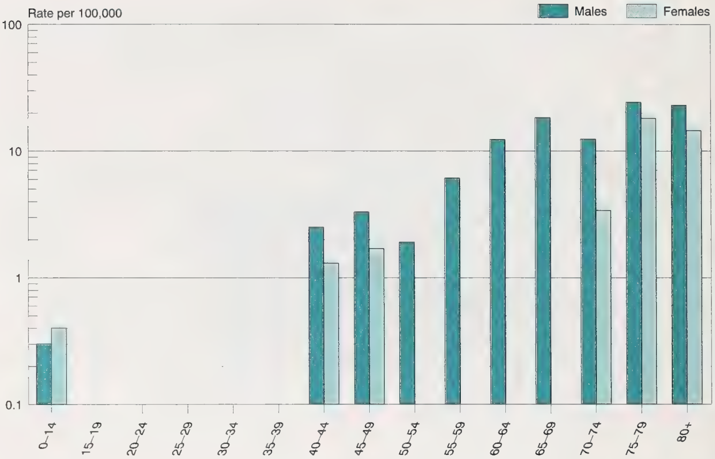
Histology

This group is comprised of both intrahepatic bile duct tumors as well as primary liver cancers. Five patients (12%) were diagnosed with a cholangiocarcinoma. The majority (65%) had a hepatocellular carcinoma.

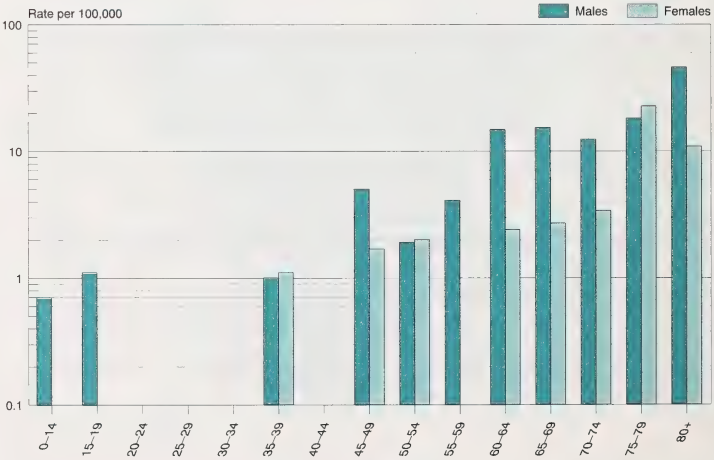
Mortality

A total of 49 patients (36 males and 13 females) died in 1988 from this tumor. This accounted for 2% of the total cancer mortality in the province. The mortality rate was 1.2 per 100,000 for females and 2.9 per 100,000 for males. The case-fatality rate was extremely high (114%) which is an indicator of poor survival.

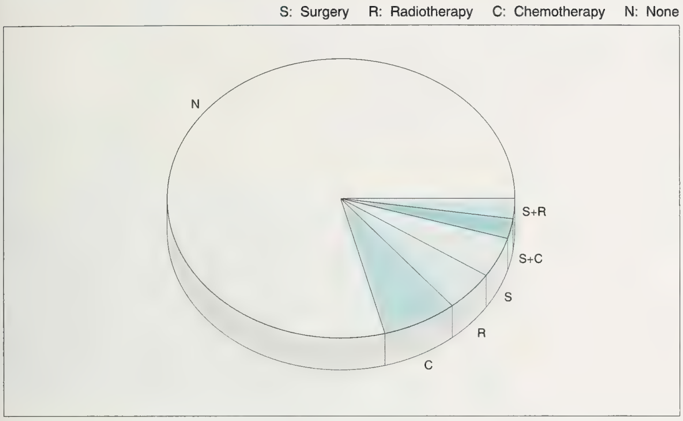
☐ **Incidence**



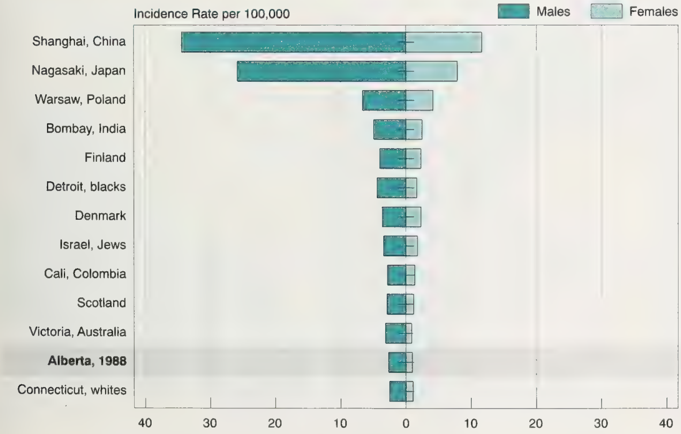
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

Only 17 persons diagnosed with liver cancer at some point in time were alive at the midpoint of 1988.

Treatment

79% of liver cancer patients did not receive surgery, radiotherapy or chemotherapy. Patients who received one of these treatments were most likely to receive a single mode of treatment, rather than a combination of modalities.

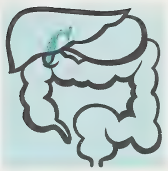
Survival

Amongst persons who died of liver cancer in 1988, the mean survival after diagnosis was one year for males and less than half a year for females. The one-year relative survival for patients diagnosed in 1988 was for males 22% and for females 23%.

International Comparison

The incidence rates for liver cancer in Alberta are among the lowest in the world. Liver cancers are most frequent in Shanghai, China, both in males ($34.4/10^5$) and in females ($11.6/10^5$). In males, the lowest rate exists in Southern Ireland ($0.1/10^5$), in females this is in rural New South Wales, Australia ($0.2/10^5$).

Gallbladder and Biliary Tract Cancer



Introduction

Cancers of the gallbladder and biliary tract are more frequent in females than in males. It has been suggested that hormonal factors play a role in the etiology of these tumors, and diet also seems to be involved.

These cancers were the least commonly occurring of all male cancers and were the fifth least commonly occurring for females. Male mortality rates were fifth lowest while female mortality rates were in the middle of the range.

Incidence

Biliary tract and gallbladder cancers are rare tumors in Alberta. In 1988, 52 new tumors were diagnosed (35 in females and 17 in males). The incidence rate was 1.4 per 100,000 for males and 2.9 per 100,000 for females. Age-specific incidence rates are shown in the figure.

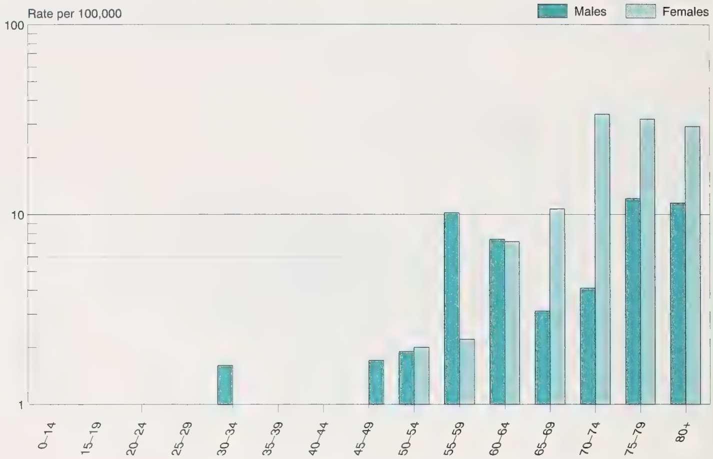
Histology

The majority of these cancers were diagnosed as adenocarcinomas (65%). In 11 cases (21%) no histologic confirmation of the diagnosis was obtained. One patient had a carcinoid tumor and one a malignant melanoma of the gallbladder.

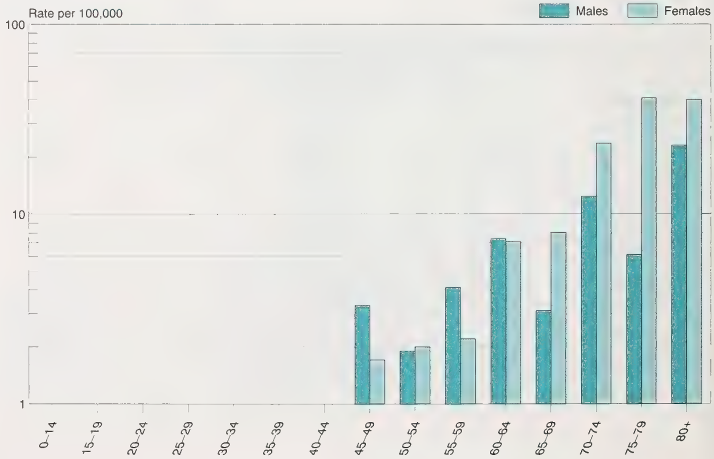
Mortality

In total, 53 patients died in 1988 because of this type of tumor (17 males and 36 females). This accounted for 2% of cancer deaths in the province. The mortality rate was 1.4 per 100,000 for males and 3.0 per 100,000 for females. The case-fatality rate was high (102%).

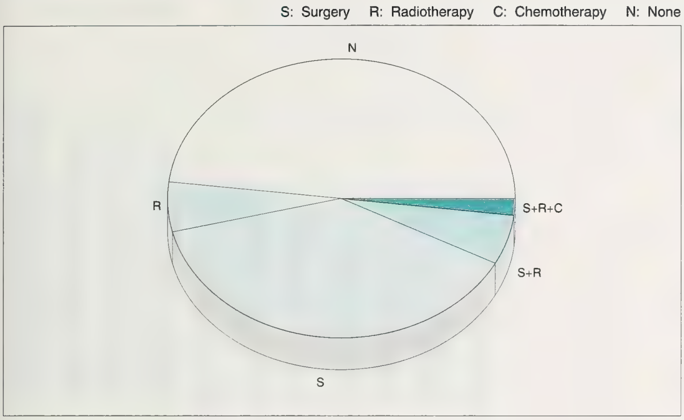
☐ Incidence



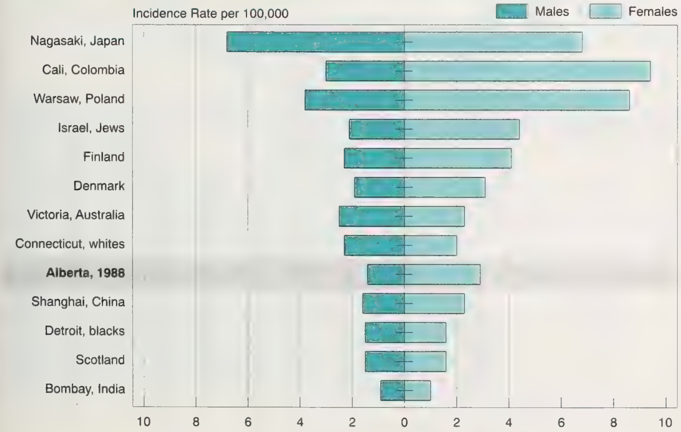
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Prevalence

Thirty-eight patients were alive at the midpoint of 1988 with a biliary tract tumor. This was 0.2% of all prevalent cancer cases.

Treatment

If any treatment was given, it usually was surgery (46%). Chemotherapy was never used and radiotherapy alone was given to 6% of the patients. 48% of patients received none of these three treatment modalities.

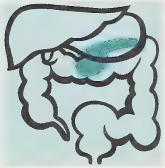
Survival

Amongst persons who died of cancer of the gallbladder or biliary tract in 1988, the mean number of years survived after diagnosis was 3.4 for males and 2.9 for females. The one-year relative survival rate for patients diagnosed in 1988 was 47% for males and only 25% for females.

International Comparison

The incidence rates for these types of tumors in Alberta, compared to other countries in the world, are rather low. The range of incidence rates in males is $10.8/10^5$ (in Indians in New Mexico, USA) to $0.3/10^5$ (Neth. Antilles). In females the highest rate is found in Indians in New Mexico as well ($13.2/10^5$), the lowest rate occurs in Madras, India ($0.2/10^5$).

Pancreas Cancer



Introduction

Pancreatic cancer is becoming increasingly frequent in Alberta. Except for a relation with cigarette smoking, little is known about etiologic factors for these tumors.

Pancreatic cancer ranked as the tenth most commonly occurring tumor in males in 1988 and eleventh in females. The male mortality rate for pancreatic cancer was fourth highest while female mortality rate was sixth highest.

Incidence

A total of 181 malignant tumors of the pancreas were newly diagnosed in 1988 (107 in males and 74 in females). This resulted in an age-standardized incidence rate of 8.9 per 100,000 for males and 6.2 per 100,000 for females. Age-specific incidence rates are shown in the figure.

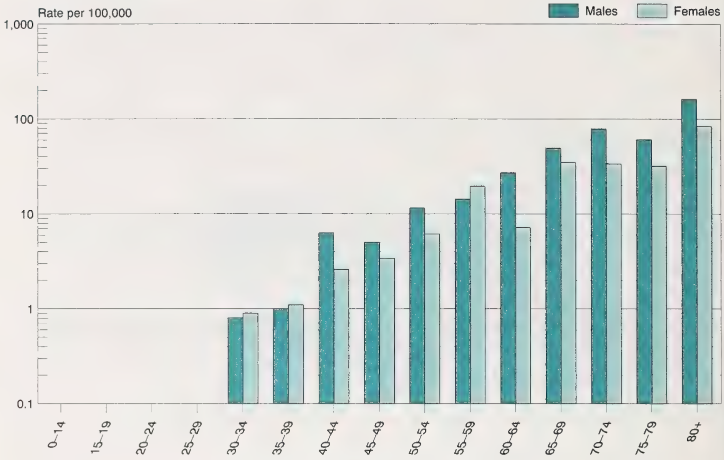
Histology

Half of the patients were diagnosed with an adenocarcinoma (50%). In a high proportion of the cases, either no histology was available (23%), or the histology was given as "carcinoma not-otherwise-specified" (23%). Three islett cell carcinomas and one carcinoid tumor were diagnosed.

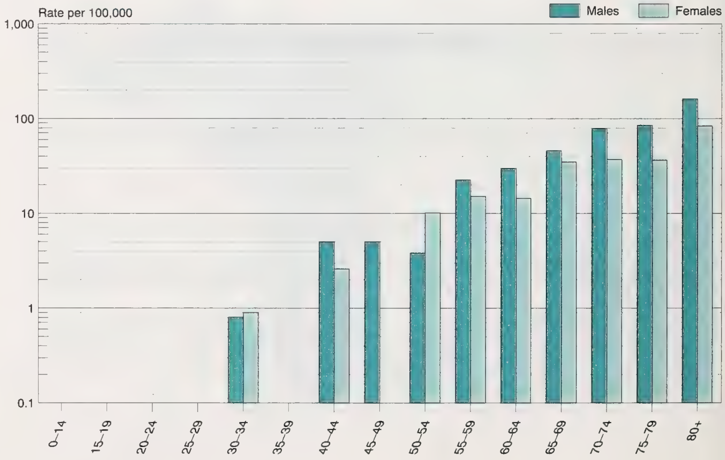
Mortality

In 1988, 185 patients (109 males and 76 females) died from pancreatic cancer. This was 6% of the total cancer mortality in Alberta. The mortality rate for pancreatic cancer was 9.0 per 100,000 for males and 6.4 per 100,000 for females. The case-fatality rate was, as in liver and gallbladder tumors, very high (102%).

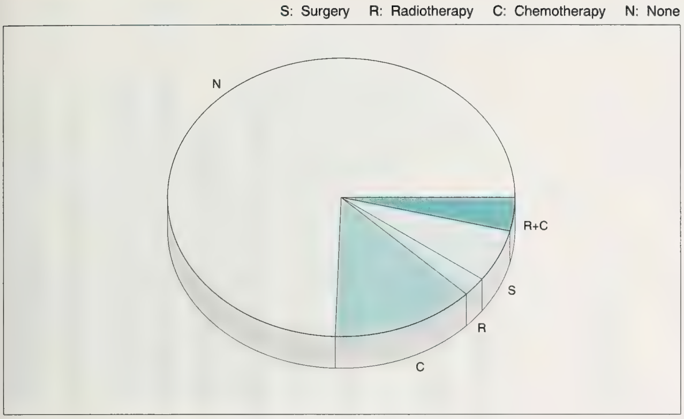
☐ **Incidence**



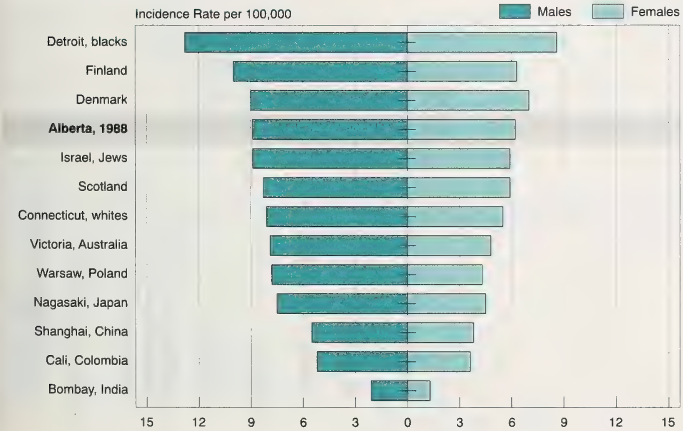
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 47 patients with pancreatic cancer were alive. This was 0.2% of all prevalent cases.

Treatment

In 74% of the patients, no treatment was given (or it was unknown what treatment was given). Chemotherapy alone was given to 13% of the patients and 6% were treated with surgery alone. The remainder received radiotherapy, either alone or in combination with other treatments.

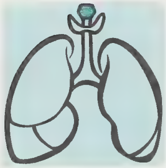
Survival

Amongst persons who died of pancreatic cancer in 1988, the average number of years survived after the diagnosis was 1.5 for males and 2.6 for females. The one-year relative survival for patients diagnosed in 1988 was 25% for females and only 14% for males.

International Comparison

The incidence rate of pancreatic cancers in Alberta is amongst the higher ones in the world. The lowest rates, both in males ($0.7/10^5$) and in females ($0.5/10^5$) are found in Bangalore, India. The highest rate in males exists in Koreans in Los Angeles, USA ($16.4/10^5$). In females, pancreatic cancer is most frequent in blacks in Alameda county in California, USA ($9.4/10^5$).

Larynx Cancer



Introduction

In Alberta, the incidence of laryngeal cancer is increasing, more rapidly in males than in females. These tumors are strongly related to alcohol consumption and cigarette smoking. An attributable risk of 80% for smoking has been estimated.

Laryngeal tumors were the eighth least commonly occurring tumors amongst males and were third least common amongst females. Mortality rates were also relatively low, being sixth lowest for males and fourth lowest for females.

Incidence

In 1988, 74 laryngeal tumors were diagnosed, 59 in males (80%) and 15 in females (20%). This resulted in an age-standardized incidence rate of 4.9 per 100,000 for males and 1.3 per 100,000 for females. Age-specific incidence rates are shown in the figure.

Histology

With only few exceptions, laryngeal cancers were all squamous cell carcinomas.

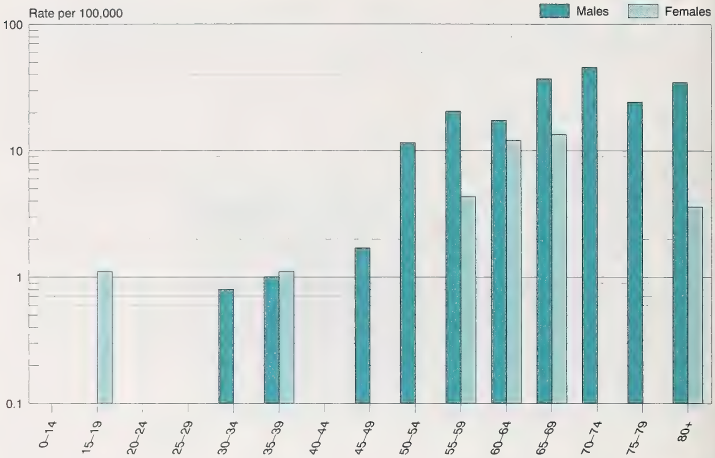
Mortality

Twenty-three patients died in 1988 from laryngeal cancers. This was 0.7% of all cancer deaths. The mortality rate was 1.4 per 100,000 for males and 0.5 per 100,000 for females. The case-fatality rate was 31%.

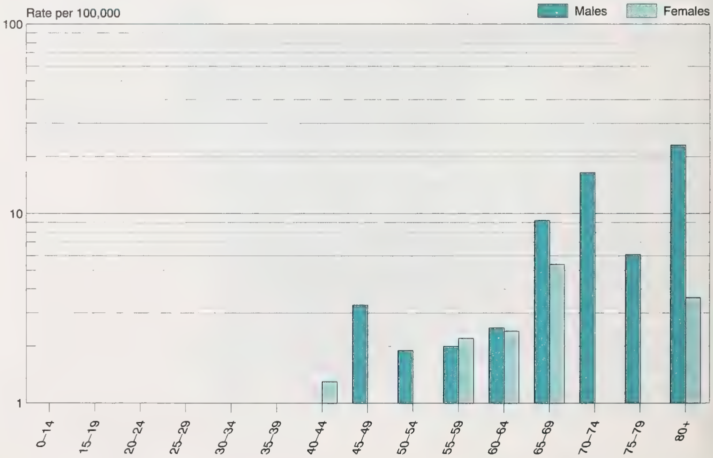
Prevalence

At the mid-point 1988, 176 patients (144 males and 32 females) were known to be alive with this tumor. This was 0.8% of all prevalent cases (excluding non-melanoma skin cancer).

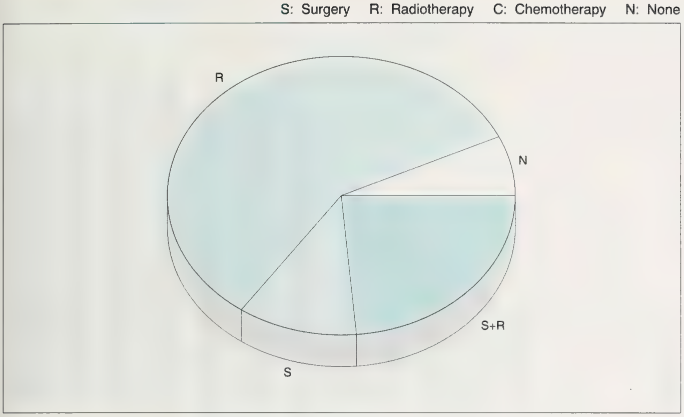
☐ **Incidence**



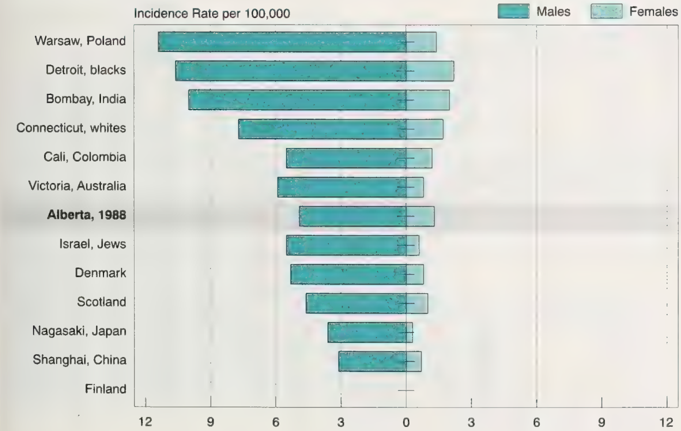
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Treatment

The majority of the newly diagnosed patients were treated with radiotherapy, either alone (57%), or in combination with other modalities (26%). Only 11% of patients were treated by surgery alone.

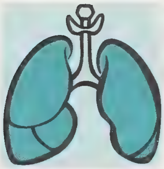
Survival

The mean number of years survived after diagnosis for persons who died of laryngeal cancer in 1988 was 3.6 for males and 8.7 for females. The one-year relative survival for patients diagnosed in 1988 was 87% for males and 80% for females.

International Comparison

Laryngeal cancer incidence rates in Alberta are in the low/middle range in the world. The range in males is from 17.8/10^5 (in Sao Paulo, Brazil) to 1.1/10^5 (in Malayans in Singapore). In females the highest frequency of larynx tumors is found in blacks in Connecticut (2.7/10^5), the lowest (0.1/10^5) occurs in Western Europe (Zurich, Switzerland and Tarragona, Spain).

Lung Cancer



Introduction

For females in Alberta, lung cancer incidence is dramatically increasing, while for males a plateau appears to have been reached and possibly a decline in incidence can be expected. The major risk factor for lung cancer is smoking, but occupational factors are suspected to play a role as well. The occurrence of lung cancer ranked second for both males and females. Mortality rates for lung cancer were highest for males and only surpassed by breast cancer for females.

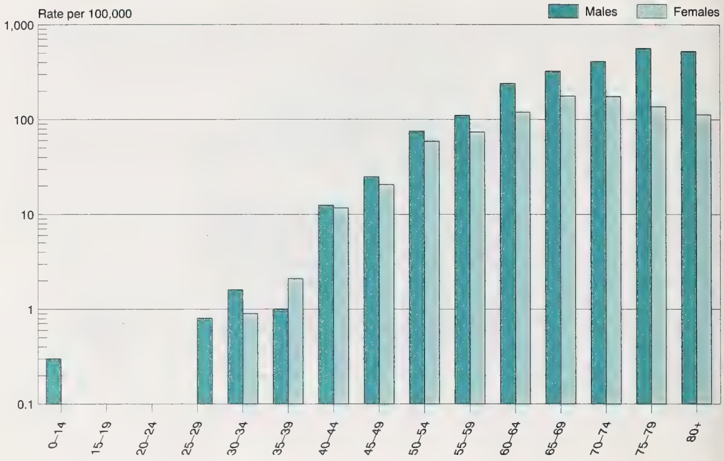
Incidence

A total of 924 lung tumors were newly diagnosed in 1988, 607 in males (66%) and 317 in females. This was 13% of all incident cancers (excluding non-melanoma skin cancer) and accounted for an incidence rate of 50.4 per 100,000 for males and 26.6 per 100,000 for females. Age-specific incidence rates are shown in the figure.

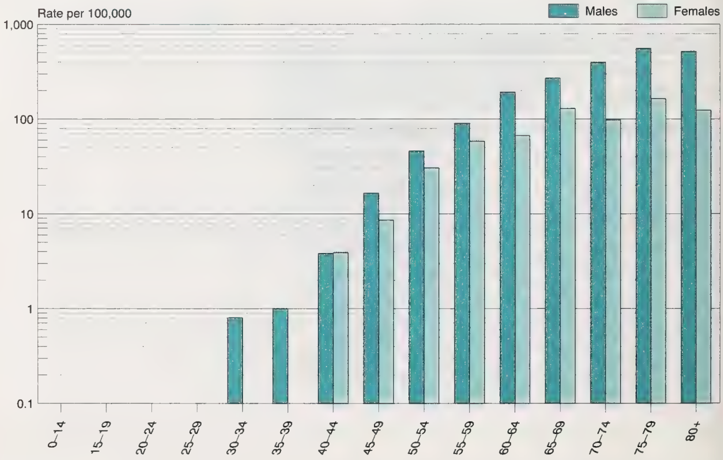
Histology

In 17% of the patients either no microscopic confirmation of the tumor was present or the tumor was classified as an unspecified carcinoma. Of the remaining 768 cases, 35% were squamous cell tumors and 31% were adenocarcinomas. Small cell carcinomas accounted for 22%, with another 9% being large cell carcinomas. Twelve patients were diagnosed with a carcinoid tumor of the lung.

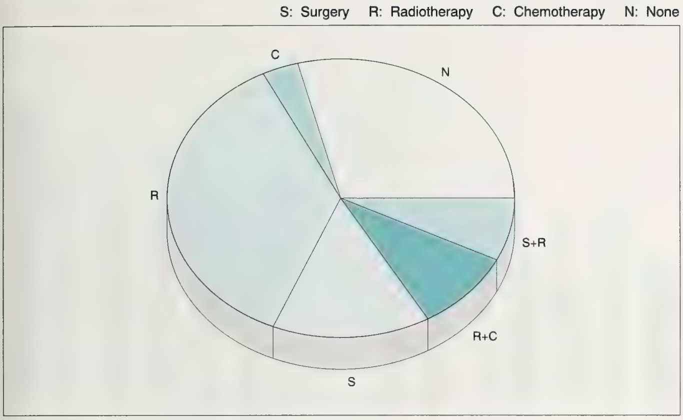
☐ **Incidence**



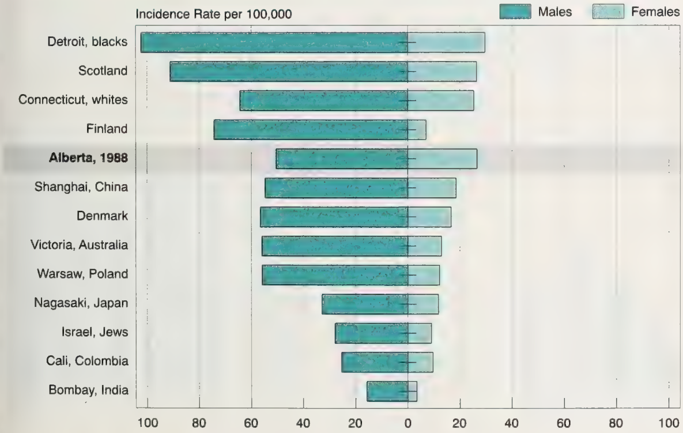
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Mortality

Lung cancer was the most frequent cause of cancer death in Alberta. Almost one-quarter (22%) of all cancer deaths in Alberta in 1988 were caused by lung cancer, 526 males and 225 females died from these tumors. The mortality rate for males was 43.6 per 100,000 and for females it was 18.9 per 100,000. The case-fatality rate was high (81%).

Prevalence

At the mid-point of 1988, 528 patients were alive with lung cancer. This was 3% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

The most commonly used treatment for lung cancer patients was radiotherapy alone (36%). Surgery alone was used to treat 15% of patients and chemotherapy was part of the treatment plan for 13% of patients. 29% of patients received none of these three single treatment modalities.

Survival

Amongst persons who died of lung cancer in 1988, the average number of years survived after diagnosis was 2.5 for males and 3.6 for females. The one-year relative survival for patients diagnosed in 1988 was 40% for males and 47% for females.

International Comparison

The lung cancer incidence rates in Alberta are in the middle range in the world. The highest rate in males occurs in blacks in New Orleans ($110/10^5$), in females this is in Maori's in New Zealand ($68.1/10^5$). The lowest rates are found in India: for males in Madras ($5.8/10^5$), for females in Nagpur ($0.5/10^5$).

Cancers of Bone and Connective Tissue

Introduction

Cancers of the bone and connective tissue are not well understood in terms of etiologic factors. While they are one of the most common cancers in childhood, they are relatively rare in older persons and in total ranked fourth least common for males and sixth least common for females. Mortality rates were relatively low, being seventh lowest for both males and females.

Incidence

Bone and connective tissue tumors accounted for only 1% of the incident cases in Alberta (excluding non-melanoma skin cancer). In 1988, 73 malignant tumors of bone and connective tissue were newly diagnosed, 34 in males and 39 in females. This resulted in an incidence rate of 2.8 per 100,000 for males and 3.3 per 100,000 for females. Age-specific incidence rates are shown in the figure.

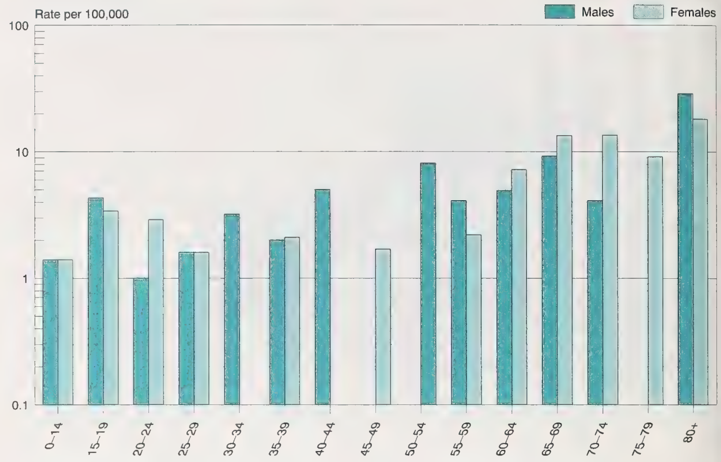
Histology

The majority of these tumors were various types of soft tissue sarcomas. Bone tumors accounted for 23 cases (32%).

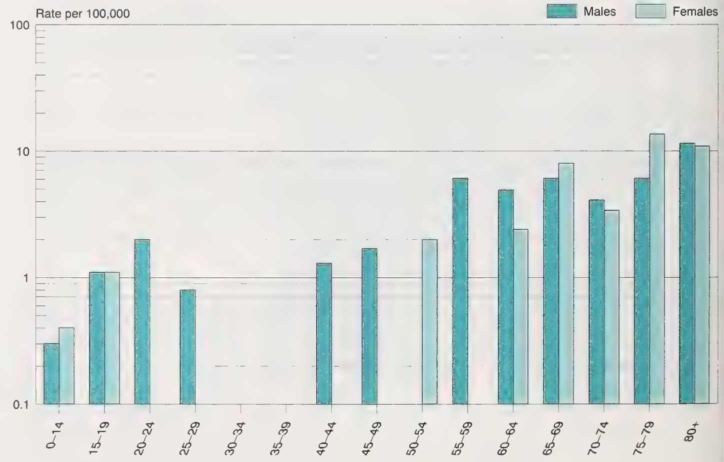
Mortality

Thirty-two patients died from these cancers in 1988 (18 males and 14 females) which was 1% of the total cancer mortality. The mortality rates for males and females were virtually the same: 1.5 per 100,000 for males and 1.2 per 100,000 for females. The case-fatality rate was 44%.

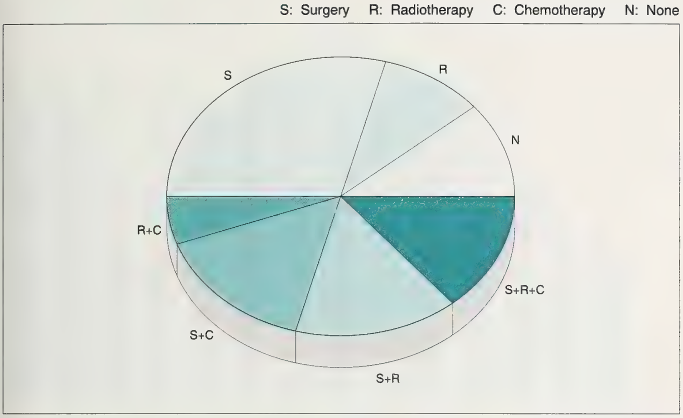
☐ **Incidence**



☐ **Mortality**



☐ Method of Treatment



Prevalence

At the mid-point of 1988, 276 patients were alive with these cancers. This was 1% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

Fifty percent of the patients were treated with some form of combination treatment, and usually chemotherapy was part of the treatment plan. About one-third of the patients (29%) were treated with surgery only.

Survival

The average number of years survived after diagnosis for persons who died in 1988 of cancer of the bone or connective tissue was 2.7 years for males and 3.5 years for females. The one-year relative survival for patients diagnosed in this year was 80% for males and 89% for females.

Melanoma

Introduction

The frequency of melanoma is increasing steadily in Alberta. Sun exposure is the major known etiologic factor.

Melanoma ranked as the twelfth most commonly occurring cancer for males and sixth amongst females. Mortality rates were relatively low, being fourth lowest for males and fifth lowest for females.

Incidence

Newly diagnosed melanomas accounted for 3% of the cancer incidence in Alberta (excluding non-melanoma skin cancer). A total of 171 cases were diagnosed: 77 in males and 94 in females. The incidence rate was 7.7 per 100,000 for males and 10.8 per 100,000 for females. Age-specific incidence rates are shown in the figure.

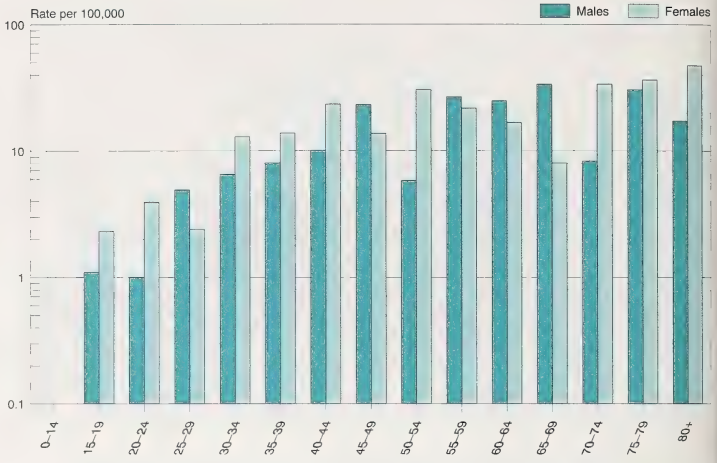
Histology

Most melanomas were diagnosed as superficial spreading (60%), 22 cases were nodular melanomas (13%) and 38 cases were classified as an unspecified melanoma (22%).

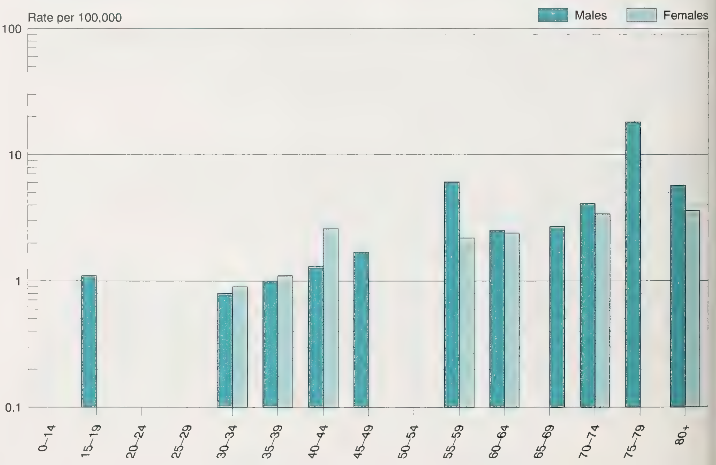
Mortality

Mortality of melanoma accounted for 0.7% of the total cancer mortality. In 1988, 23 patients (14 males and 9 females) died from melanoma. This resulted in a mortality rate of 1.0 per 100,000 for males and 0.8 per 100,000 for females. The case-fatality rate was 14%.

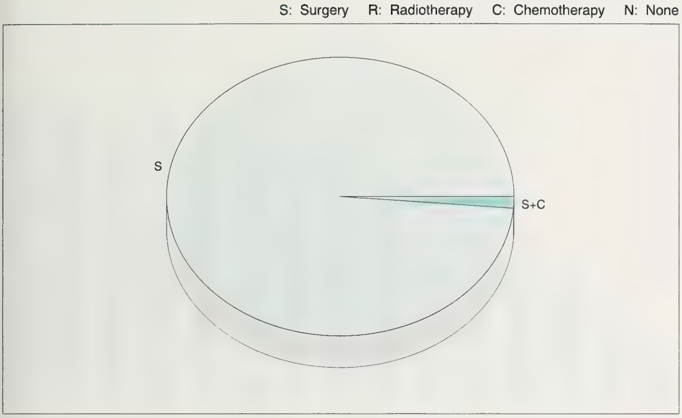
☐ Incidence



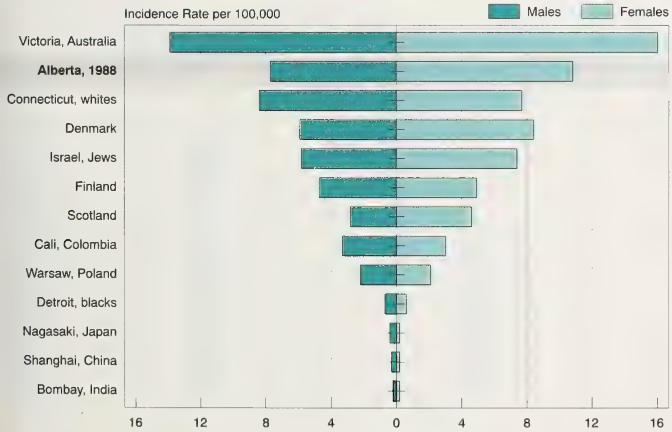
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Prevalence

A total of 479 patients were known to be alive with melanoma at the mid-point of 1988. This was 2% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

Almost all patients with melanoma (98%) were treated with surgery only.

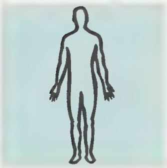
Survival

Amongst persons who died of melanoma during 1988, the mean number of years survived after diagnosis was twice as much for females (9.3 years) as for males (4.2 years). The one-year relative survival for patients diagnosed in 1988 was 99% for both females and males.

International Comparison

The frequency of melanomas of the skin in Alberta is, compared to other countries in the world, in the upper/middle range. The highest rates, both in males ($30.9/10^5$) and in females ($28.5/10^5$) occur in Queensland, Australia. The lowest rates are in the Far Eastern Asian countries: males in Madras, India ($0.1/10^5$) and females in Tianjin, China ($0.1/10^5$).

Non-Melanoma Skin Cancer



Introduction

The predominant risk factor for non-melanoma skin cancer is sun-exposure. Although these tumors are malignant, their clinical course is rather benign. Caution needs to be exercised in interpreting the data relating to these tumors, since there is some doubt about the completeness of reporting.

Incidence

Of all tumors registered in 1988, 28% were non-melanoma skin cancers. A total of 2850 non-melanoma skin cancers (incl. in-situ tumors) were diagnosed in 1988. This resulted in an incidence rate of 123.6 per 100,000 for males and 114.1 per 100,000 for females. Age-specific incidence rates are shown in the figure.

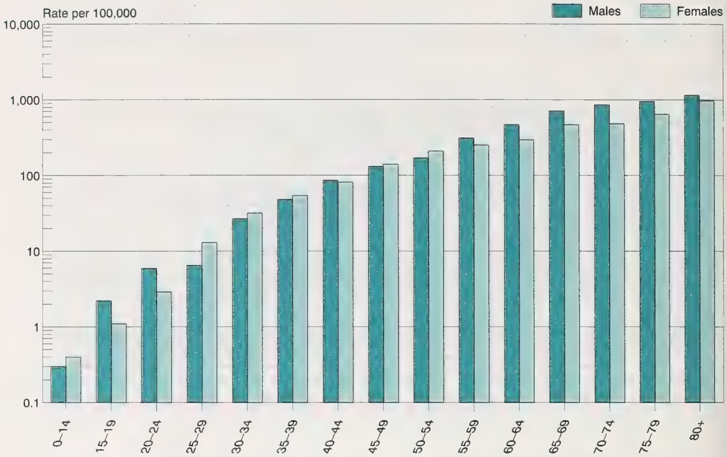
Histology

The majority of cases were basal cell carcinomas (69%), 26% were characterized as a squamous cell carcinoma. In 79 cases, the diagnosis Bowen's disease was made, while 8 Kaposi sarcomas were diagnosed.

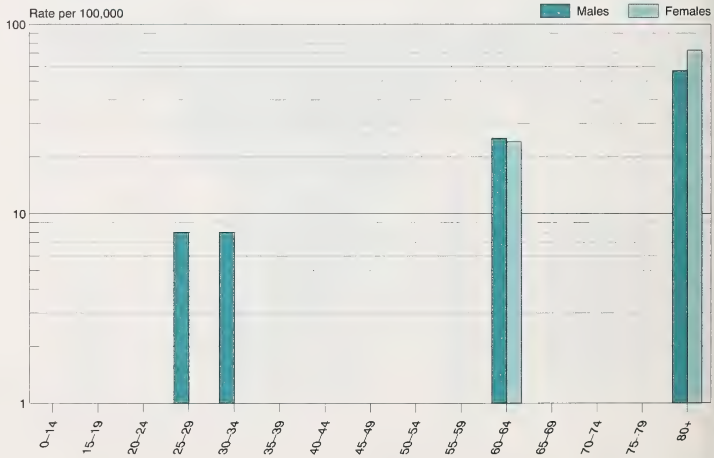
Mortality

The number of patients that died of nonmelanoma skin cancer was extremely low (7), indicating the rather benign clinical course. The case-fatality rate was 0.2%.

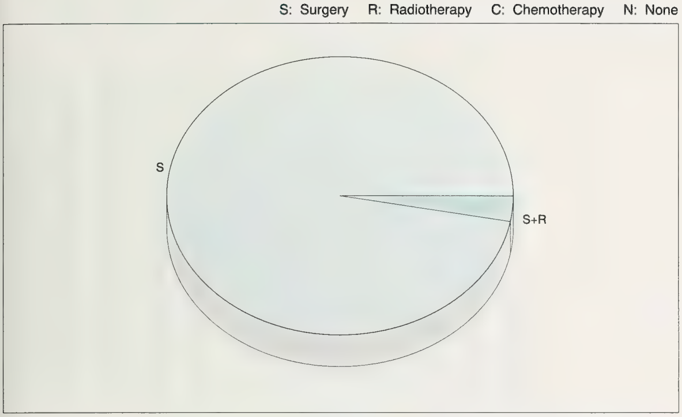
☐ Incidence



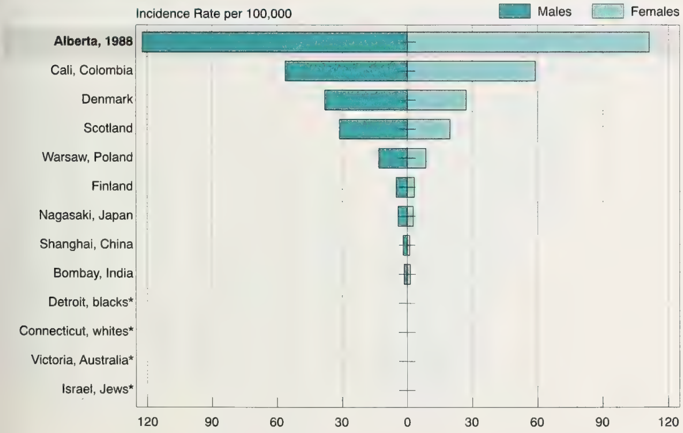
☐ Mortality



☐ Method of Treatment



☐ International Comparison



* Data not available

Prevalence

The low mortality results in a very high prevalence, 8,190 patients were known to be alive with a diagnosis of non-melanoma skin cancer at the mid-point of 1988. This was 28% of all prevalent cancer patients.

Treatment

The majority of patients (96%) were treated with surgery alone. Radiotherapy was given to 4% of patients.

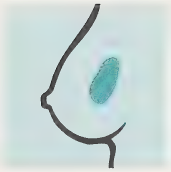
Survival

The one-year survival for non-melanoma skin cancer was 99% for males and 100% for females.

International Comparison

The incidence rate of these tumors in Alberta females ($114.1/10^5$) is the highest reported in the world. The lowest rate in females is found in Madras, India ($0.9/10^5$). In males the rate in Alberta is among the highest in the world as well, the highest is found in Tasmania, Australia ($167.2/10^5$). The lowest rate is found in Madras, India ($0.9/10^5$).

Breast Cancer (females)



Introduction

Breast tumors are the leading cause of cancer morbidity and mortality in females. Causal risk factors are mainly related to lifestyle, while hormonal factors play a role as well. An increase in frequency can be observed over the last 25 years in Alberta.

Breast cancer ranked first as the most commonly occurring cancer in females. The number of cases was higher than that for any other site group, regardless of gender (excluding nonmelanoma skin cancers). Its mortality rate was the highest for any female cancer site.

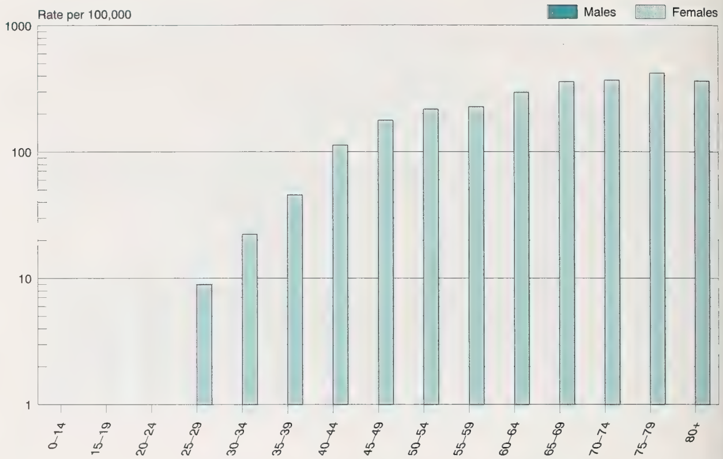
Incidence

In 1988, 1040 breast cancers were diagnosed, which resulted in an incidence rate of 87.2 per 100,000. This is the highest incidence rate in Alberta for a single cancer site. In other terms, one out of every seven tumors was a breast cancer (excluding nonmelanoma skin cancer). Age-specific incidence rates are shown in the figure.

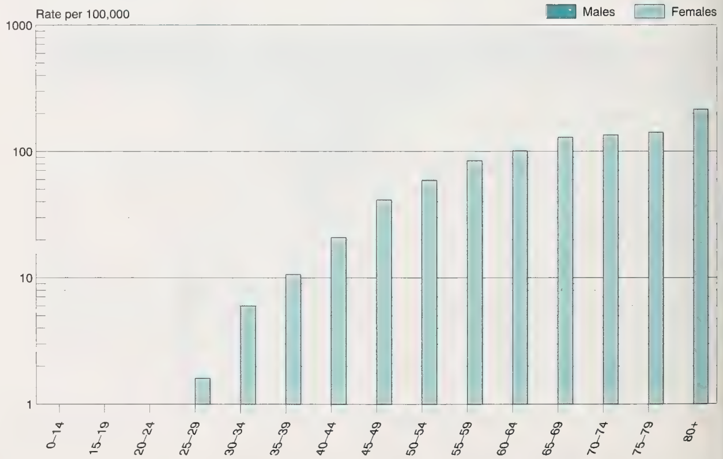
Histology

The majority of these cases (68%) were infiltrating duct carcinomas. Lobular carcinoma was diagnosed in 10% of the cases. In-situ tumors, either intraductal or lobular in-situ, were found in 6% of the cases. Twelve patients had Paget disease of the breast.

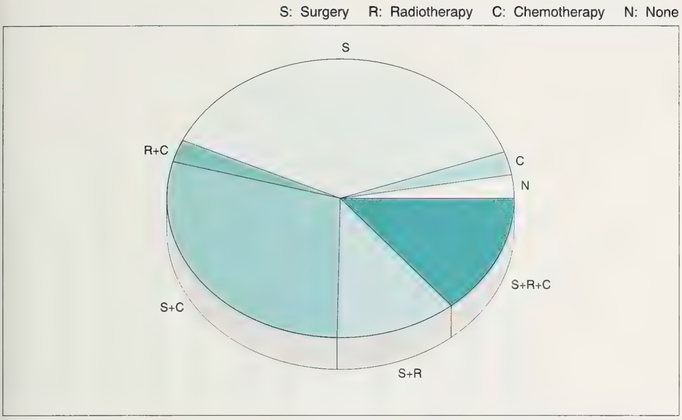
☐ **Incidence**



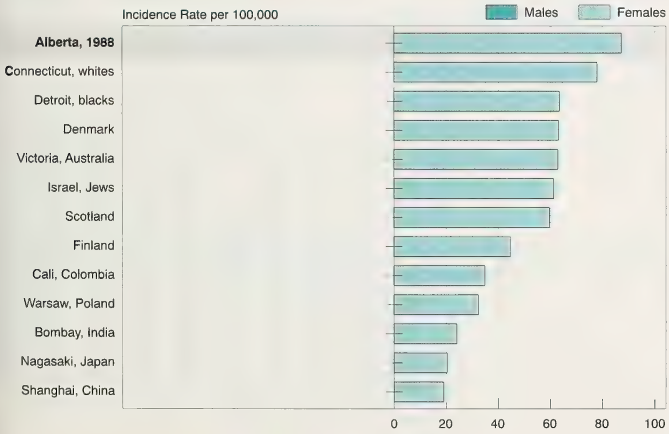
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Mortality

In 1988, 347 women died of breast cancer, which was 10% of the total cancer mortality. This accounted for a mortality rate of 29.1 per 100,000. Overall, this was second highest after lung cancer. The case-fatality rate was 33%.

Prevalence

3365 patients were known to be alive with breast cancer at the mid-point of 1988. This was 16% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

Breast cancer is a tumor in which chemotherapy is used frequently: 48% of patients received this form of treatment, usually in combination with other treatment modalities. Surgery alone was given to 38% of patients. Radiotherapy was given to 28% of patients, almost always in combination with other treatments.

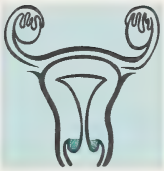
Survival

The average number of years survived after diagnosis in women who died of breast cancer in 1988 was 6.2 years. The one-year survival for women diagnosed with this tumor in 1988 was 95%.

International Comparison

The frequency of breast cancer in Alberta is among the highest in the world. The lowest rate is found in Koreans in Los Angeles, USA (14.1/10^5), the highest reported rate occurs in Hawaiian women (93.9/10^5).

Cervix Cancer (Invasive)



Introduction

The frequency of invasive cancers of the cervix has steadily declined over the past 25 years. The predominant risk factors are related to sexual behaviour and cigarette smoking. Most of these tumors could be prevented with regular PAP-smears, by which procedure lesions are detected in an early stage (in-situ).

Invasive cervical cancers ranked seventh most commonly occurring for females. Mortality from invasive cervical cancer ranked in the middle of the range.

Incidence

In 1988, 104 women were diagnosed with invasive cervical cancer, which was 1.5% of the total cancer burden in the province (excluding non-melanoma skin cancer). This resulted in an incidence rate of 8.7 per 100,000. Agespecific incidence rates are shown in the figure.

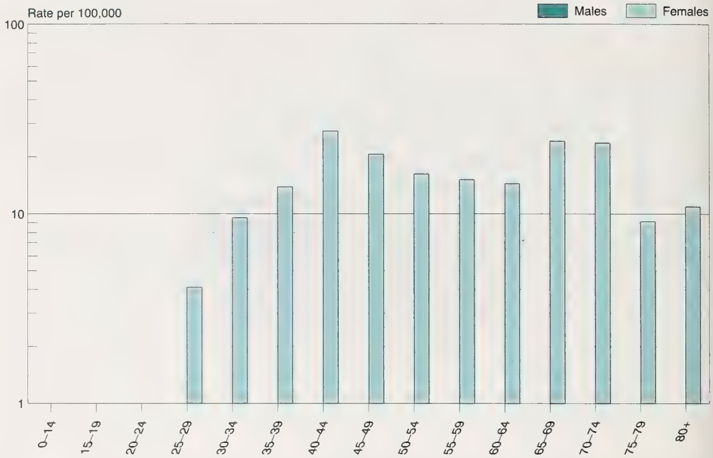
Histology

Most cervical cancers (81%) were squamous cell carcinomas.

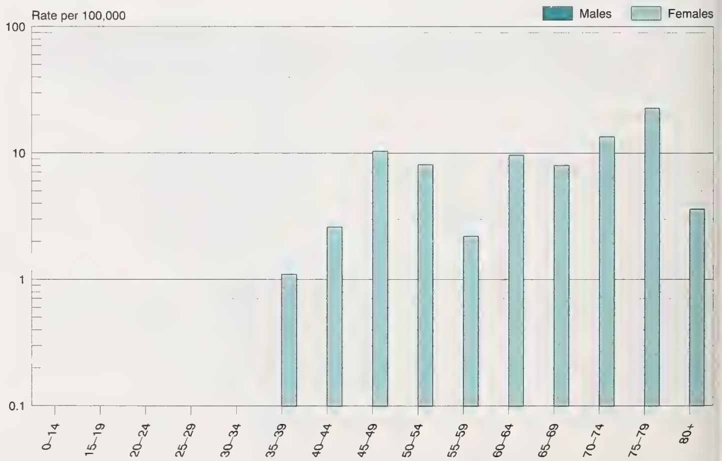
Mortality

In 1988, 31 women died of invasive cervical cancer, which accounted for a mortality rate of 2.6 per 100,000. The case-fatality rate was 30%.

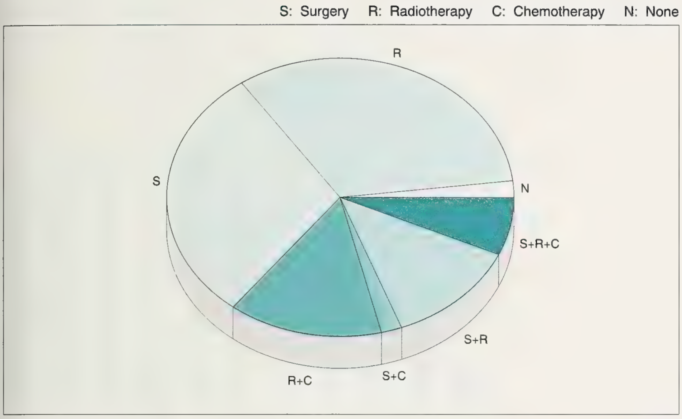
☐ **Incidence**



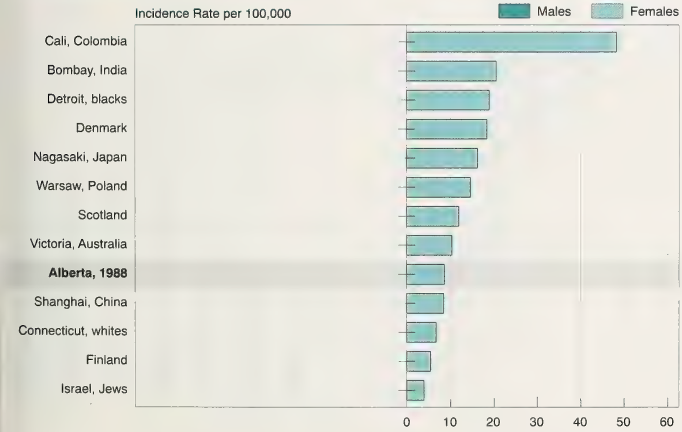
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 787 women were known to be alive with this type of cancer, which was 4% of all prevalent cases (excluding non-melanoma skin cancers).

Treatment

About one-third of all patients were treated with surgery alone, another third were treated with radiotherapy alone, while the remainder were treated with various combinations of treatments.

Survival

The average time between diagnosis and death for women who died of invasive cervical cancer in 1988 was 4 years. The one-year relative survival for women diagnosed in 1988 was 87%.

International Comparison

The incidence rate of invasive cervical cancer in Alberta is among the lowest in the world. The highest frequency occurs in Recife, Brazil ($83.2/10^5$), the lowest is found among non-Jews in Israel ($3.0/10^5$).

Endometrium Cancer

Introduction

The frequency of endometrial cancers has increased slowly over the past 25 years. The main known risk factors are exposure to estrogens, obesity and high fat consumption.

Endometrial cancer ranked fourth in women in terms of incidence. Its mortality rate was in the middle of the range for female cancer sites.

Incidence

In 1988, 216 patients were diagnosed with endometrial cancer. This was 3% of all newly diagnosed cancers (excluding non-melanoma skin cancer). The incidence rate was 18.1 per 100,000. Age-specific incidence rates are shown in the figure.

Histology

The predominant histologic type was adenocarcinoma, which was diagnosed in 86% of all the cases.

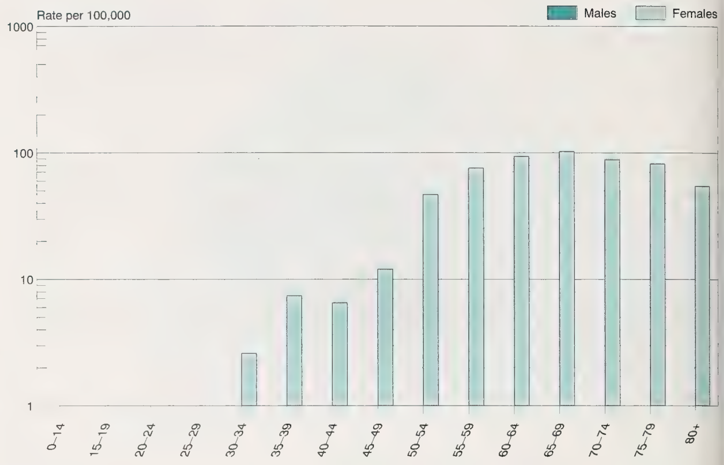
Mortality

The number of patients who died from endometrial cancer in 1988 was 27, which was 0.8% of the total cancer mortality. The mortality rate was 2.3 per 100,000. The case-fatality rate was 13%

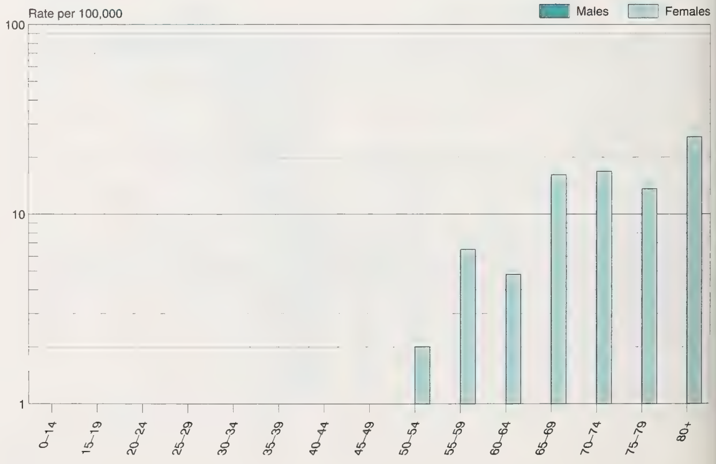
Prevalence

A total of 1149 women were known to be alive with endometrial cancer at the midpoint of 1988, which was 5% of all prevalent cases (excluding non-melanoma skin cancer).

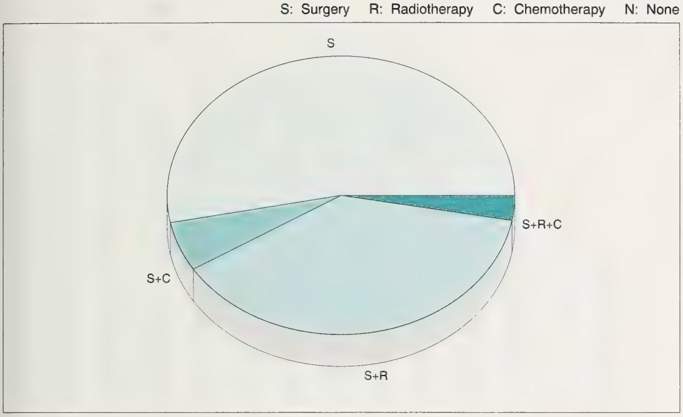
☐ Incidence



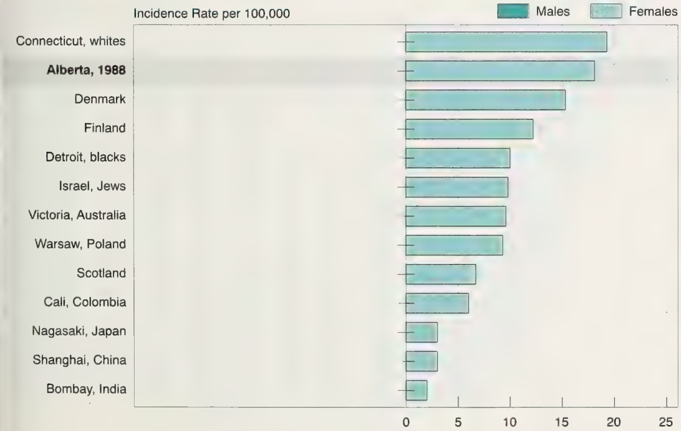
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Treatment

About half of endometrial cancer patients were treated with surgery only (51%), and another 37% were treated with radiotherapy in addition to surgery. Very few patients received chemotherapy.

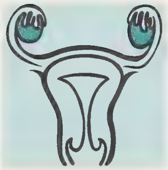
Survival

Amongst women who died of endometrial cancer in 1988, the mean period of survival after diagnosis was 7.3 years. The one-year survival for women diagnosed in 1988 was 95%.

International Comparison

The incidence rate of endometrial cancer in Alberta, compared to other countries in the world, is in the upper range. The highest frequency is found in the Bay Area in California ($25.7/10^5$), the lowest rate exists in Nagpur, India ($1.2/10^5$).

Ovarian Cancer



Introduction

The etiology of ovarian cancer is largely unknown, apart from its relationship to parity. The frequency of ovarian cancer seems to be increasing.

Its incidence ranked fifth among women, and it is the third most common, after breast and endometrium tumors, sex-specific cancer. The mortality rate for ovarian cancer was fourth highest.

Incidence

In 1988, 143 women were diagnosed with ovarian cancer, which resulted in an incidence rate of 12.0 per 100,000. This was 2% of the total cancer incidence (excluding nonmelanoma skin cancer). Age-specific incidence rates are shown in the figure.

Histology

Most tumors consisted of various types of cystadenocarcinomas (57%). In 14 cases an endometroid carcinoma was diagnosed.

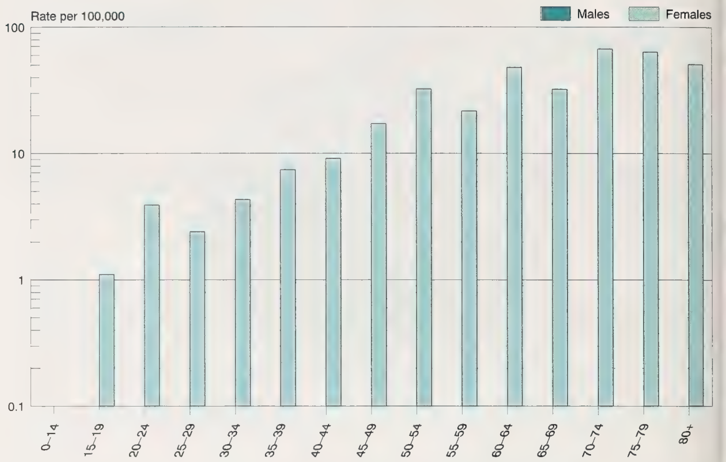
Mortality

A total of 89 women died of ovarian cancer in 1988, which was 6% of the total cancer mortality for females. The mortality rate was 7.5 per 100,000. The case-fatality rate was 62%, which was the highest of all female-specific cancers.

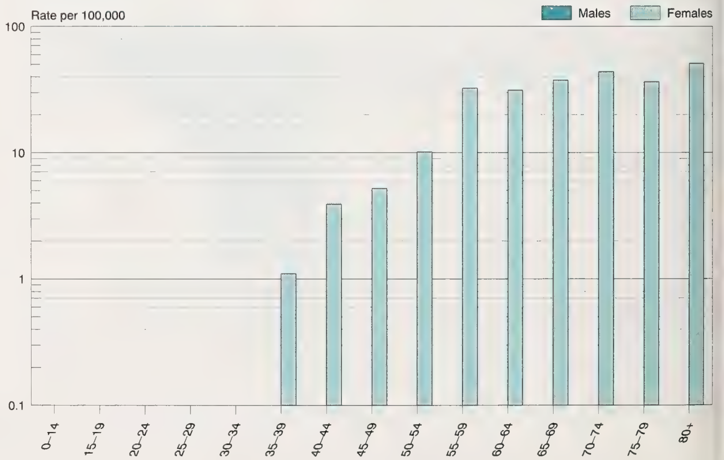
Prevalence

At the mid-point of 1988, 372 women were known to be alive with an ovarian cancer. This was 2% of the prevalent cancer cases in Alberta (excluding NMSC).

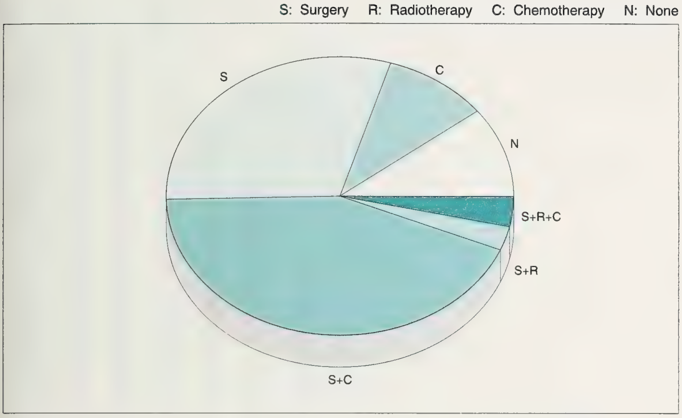
☐ Incidence



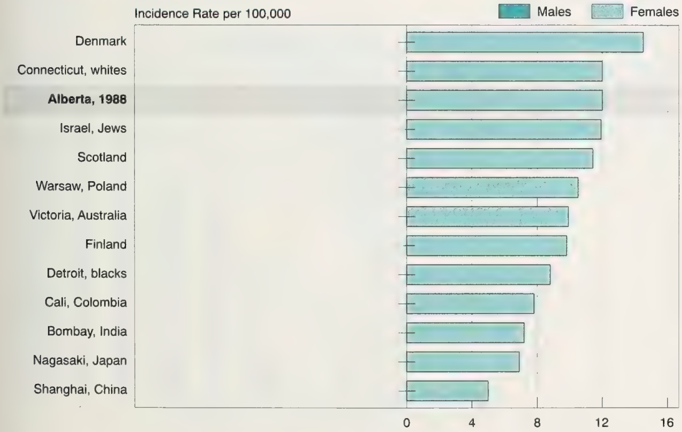
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Treatment

Ovarian cancer is often treated with chemotherapy, 57% of the patients received this form of treatment. Most often chemotherapy was combined with surgery. 30% were treated with surgery only. Radiotherapy was used in a minority of the patients.

Survival

Amongst women who died of ovarian cancer in 1988, the mean number of years survived after diagnosis was 2.3, which was the lowest figure for all female-specific tumors. One-year survival for women diagnosed in 1988 was 71%, which again was the lowest survival for any female-specific tumor.

International Comparison

Compared to other countries in the world, the frequency of ovarian cancer in Alberta is in the middle range. The highest rate exists among Pacific Polynesian Islanders, New Zealand ($25.8/10^5$), the lowest is in Kuwaitis ($3.3/10^5$).

Prostate Cancer

Introduction

Prostate cancer has been steadily increasing. Suggested etiologic factors are diet (high fat consumption) and sexual factors.

Prostate cancer ranked first for males as the most commonly occurring cancer and second in terms of mortality.

Incidence

In 1988, 656 new prostate cancers were diagnosed which was 9% of the total cancer incidence (excluding non-melanoma skin cancer). This resulted in an incidence rate of 54.4 per 100,000, by far the highest of the male sex-specific cancers. Age-specific incidence rates are shown in the figure.

Histology

Adenocarcinoma was diagnosed in virtually all cases.

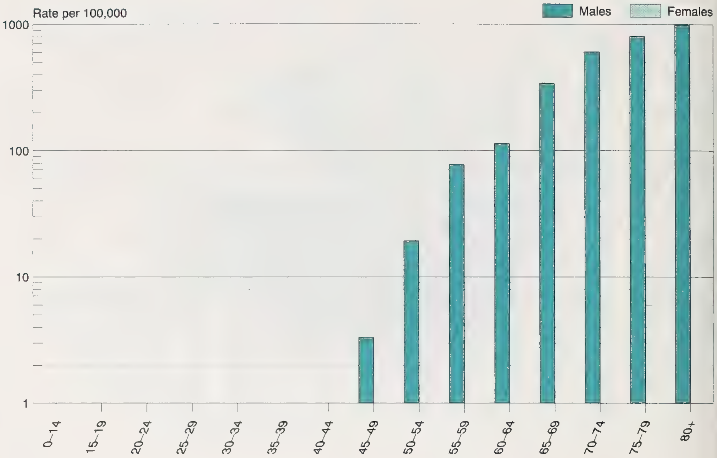
Mortality

A total of 220 males died from this tumor in 1988, which was 12% of the cancer mortality for males, and 7% of the total cancer mortality. The mortality rate was 18.3 per 100,000. The case-fatality rate was 34%.

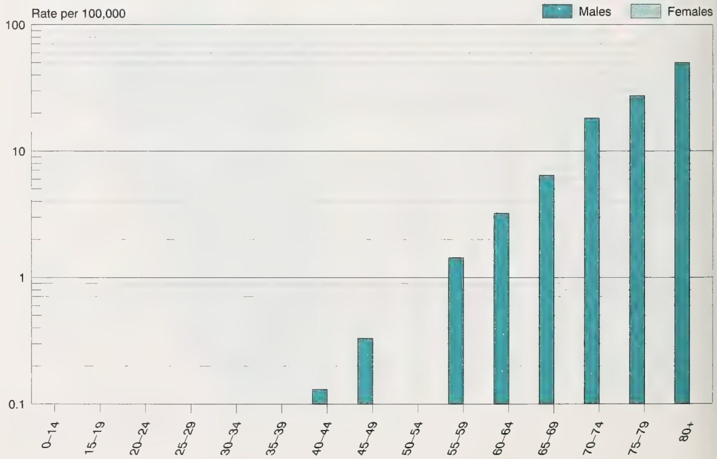
Prevalence

At the mid-point of 1988, 959 patients were alive with prostate cancer which was 5% of all prevalent cases (excluding non-melanoma skin cancer).

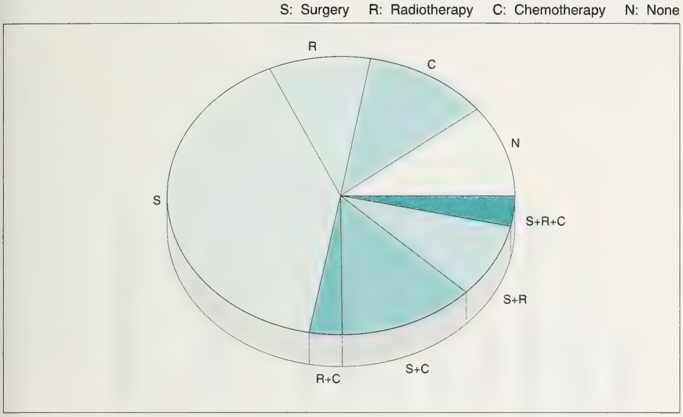
☐ **Incidence**



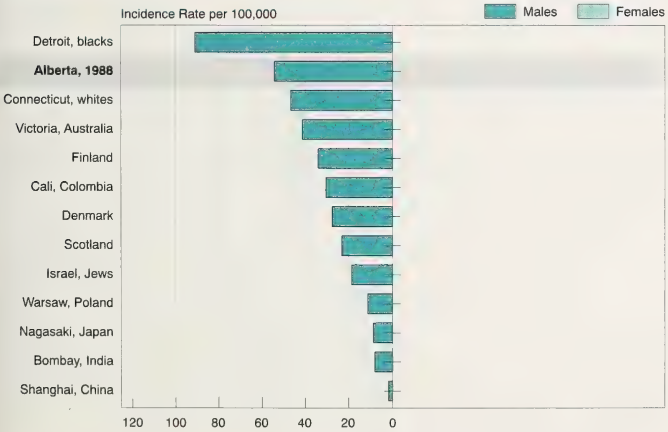
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Treatment

Of all patients 40% were treated with surgery only and 10% with radiotherapy only, 12% received chemotherapy. The remainder were given a combination of treatment modalities.

Survival

Amongst men who died of prostate cancer in 1988, the mean number of years survived after diagnosis was 4.4 years. The one-year survival rate for males diagnosed in 1988 was 92%.

International Comparison

The frequency of prostate cancer in Alberta is among the highest in the world. The highest incidence rate is found among blacks in Atlanta, USA ($91.2/10^5$), the lowest in Tianjin, China ($1.3/10^5$).

Testis Cancer

Introduction

Cancer of the testis is a relatively infrequent tumor, occurring mainly in younger males. Risk factors for testicular cancer are cryptorchidism, history of testicular injury and viral orchitis.

Testicular cancer ranked as the seventh least commonly occurring cancer for males. Testicular cancer was not responsible for any mortality in 1988.

Incidence

In 1988, 58 patients were diagnosed with testicular cancer, which accounted for an incidence rate of 4.8 per 100,000. Age-specific incidence rates are shown in the figure.

Histology

The majority of the testis tumors were seminomas (64%), with only a few embryonal carcinomas (9%) or teratomas (3%). The remainder were of a mixed histology.

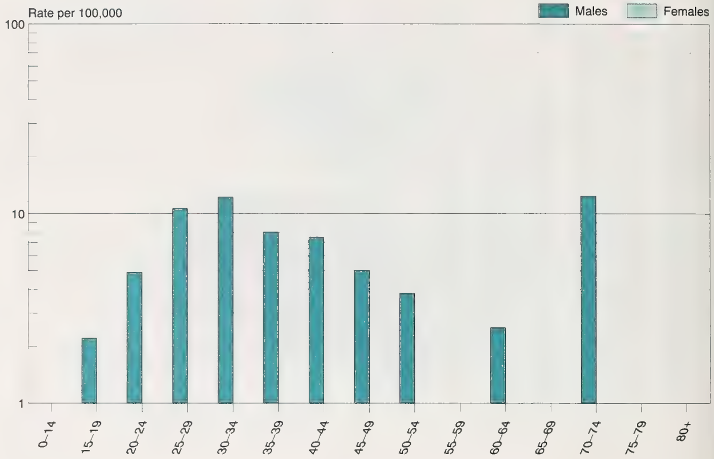
Mortality

No patient died of testicular cancer in 1988.

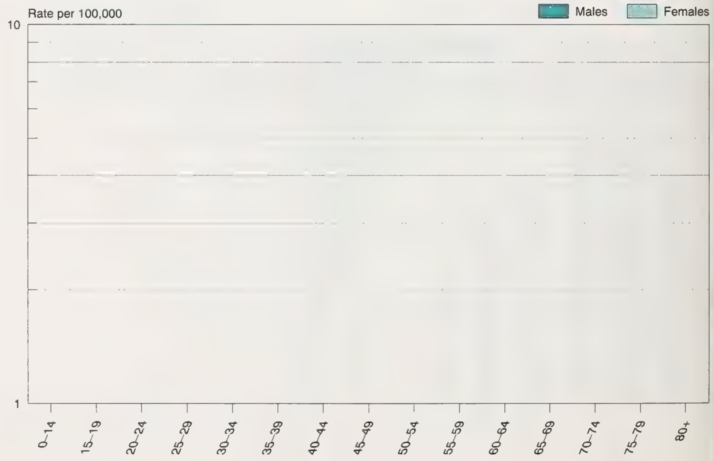
Prevalence

At the mid-point of 1988, 328 males in whom testicular cancer had been diagnosed were alive. This was 2% of all prevalent cancer cases.

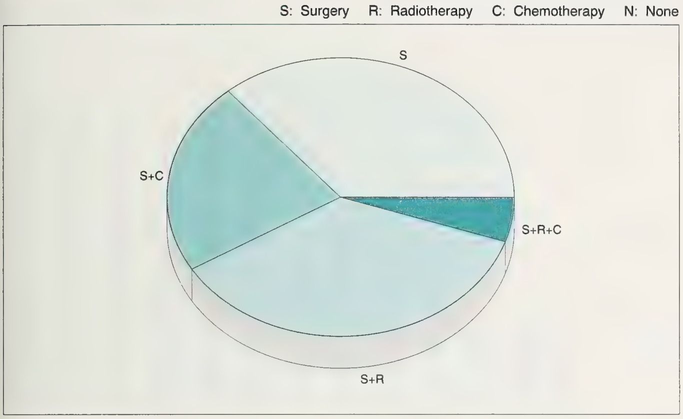
☐ Incidence



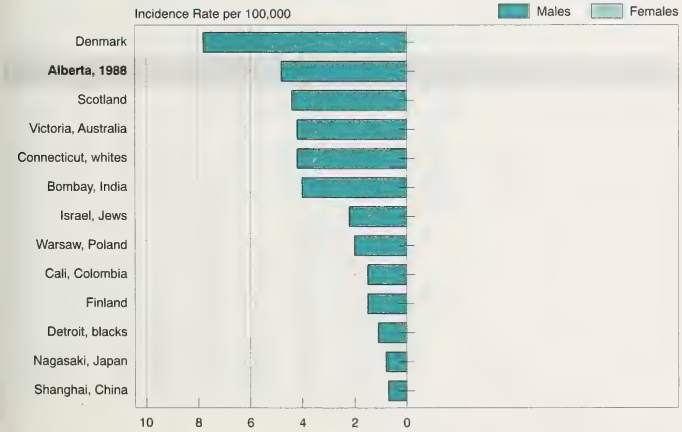
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Treatment

All patients were treated with surgery, either alone (36%) or in combination with radiotherapy (36%) or chemotherapy (28%).

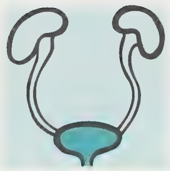
Survival

The one year relative survival for males diagnosed with testis cancer in 1988 was 100%.

International Comparison

Testicular cancer in Alberta ranks, compared to other countries, in the upper/middle range. The highest incidence rate exists in Vaud, Switzerland ($9.9/10^5$), the lowest in Filipino males in Hawaii ($0.3/10^5$).

Bladder Cancer



Introduction

This tumor is associated with smoking and exposure to certain types of industrial compounds. For males the frequency has been increasing steadily.

Bladder cancer incidence ranked 4th for males, and 10th in females. In terms of mortality it ranked 12th for males and 9th lowest for females.

Incidence

A total of 277 bladder tumors (4% of all newly diagnosed cancers, excluding nonmelanoma skin cancer) were diagnosed in 1988, 202 in males (73%) and 75 in females (27%). This resulted in an incidence rate of 16.8 per 100,000 for males and 6.3 per 100,000 for females. Age-specific incidence rates are shown in the figure.

Histology

The majority of bladder cancers were transitional cell carcinomas (92%).

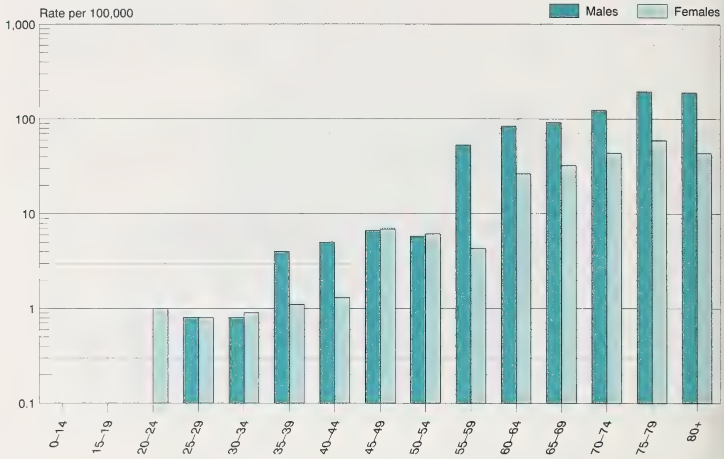
Mortality

In 1988, a total of 72 patients died of bladder cancer, 57 males and 15 females. This was 2% of the total cancer mortality, and accounted for a mortality rate of 4.7 per 100,000 for males and 1.3 per 100,000 for females. The case-fatality rate was 26%.

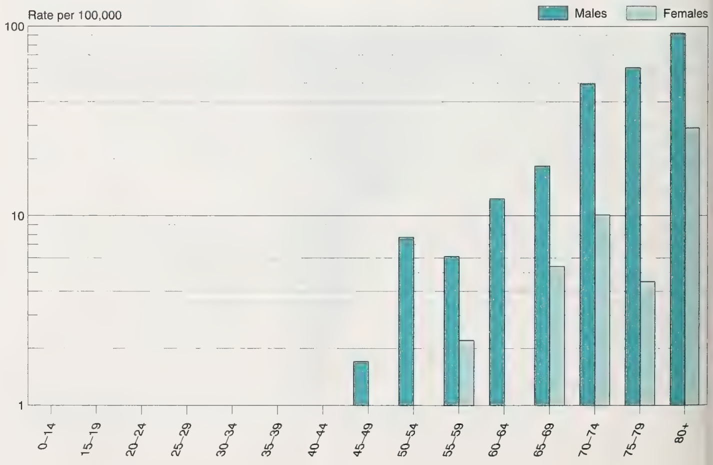
Prevalence

At the mid-point of 1988, 904 patients (666 males and 238 females) were known to be alive with bladder cancer. This was 4% of all prevalent cancer cases (excluding nonmelanoma skin cancer).

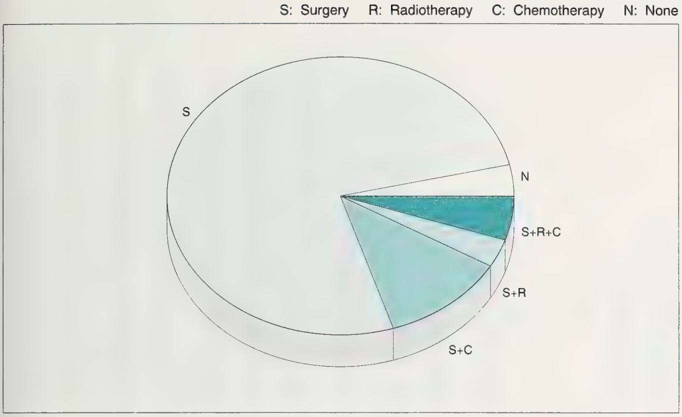
☐ Incidence



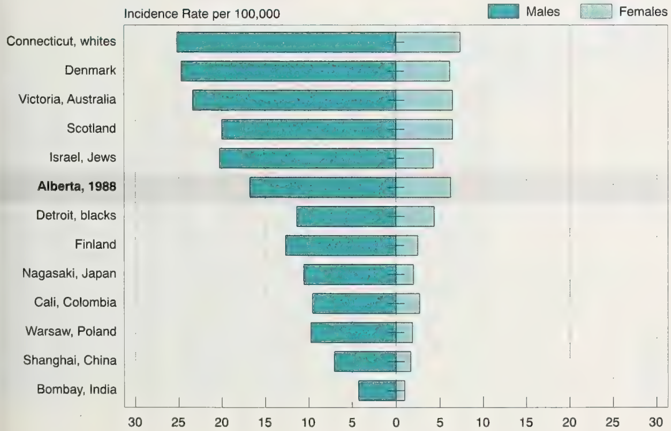
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Treatment

Surgery was the major form of treatment given, either alone (76%) or in combination with chemotherapy (12%). Radiotherapy was given only occasionally. Chemotherapy was most often given in combination with surgery.

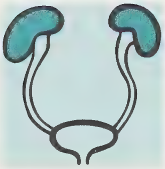
Survival

Amongst persons who died of bladder cancer in 1988, the average number of years survived after diagnosis was 4.8 years for males and 6.3 years for females. The one-year survival for patients diagnosed in 1988 was similar for both genders (95%).

International Comparison

Bladder cancer frequency in females in Alberta is among the highest in the world; in males the frequency is in the middle range. The highest rate among females exists among non-Kuwaitis in Kuwait ($8.5/10^5$), the lowest is found in Nagpur, India ($0.3/10^5$). In males the range varies from $27.8/10^5$ (in Basel, Switzerland) to $1.7/10^5$ (in Nagpur, India).

Kidney Cancer



Introduction

This site includes tumors of the renal pelvis and of the ureters, as well as tumors of the renal parenchyma. Cigarette smoking and analgesic abuse are suggested as risk factors.

Kidney cancers ranked as the 6th most commonly occurring cancer for males and 14th for females. In terms of mortality, they ranked 13th for males and 12th for females.

Incidence

In total, 205 kidney cancers were diagnosed in 1988, of which 133 (65%) occurred in males and 72 (35%) in females. The incidence rate was 11.0 per 100,000 for males and 6.0 per 100,000 for females. Age-specific incidence are shown in the figure.

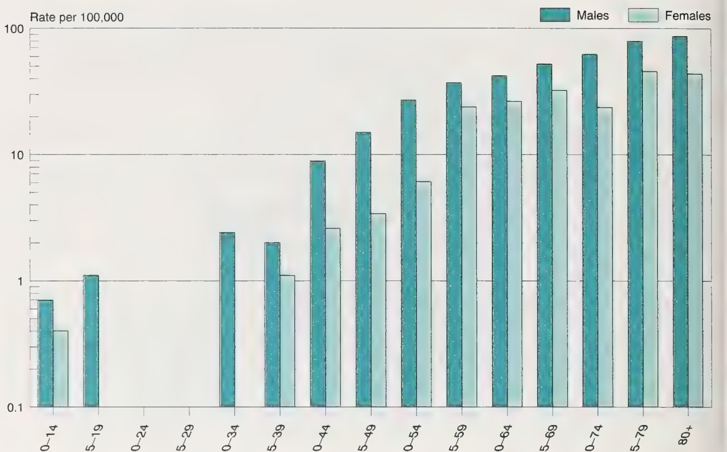
Histology

Most tumors in this group were renal cell carcinomas (58%). There were 29 adenocarcinomas (14%) and about the same number of transitional cell carcinomas. In 15 cases, no histologic confirmation was obtained.

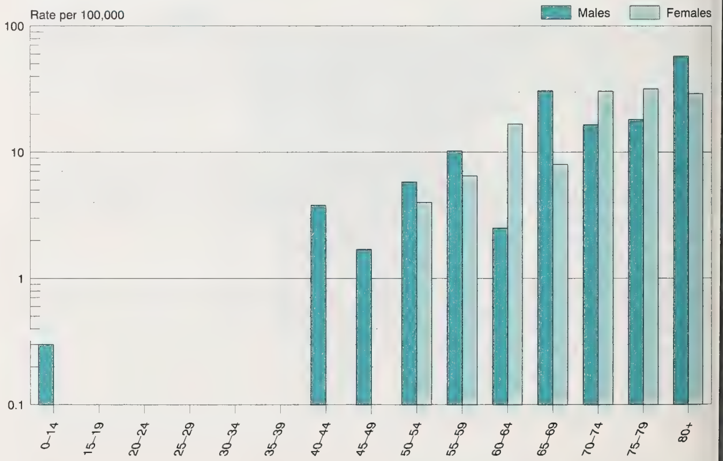
Mortality

Eighty patients (41 males and 39 females) died of kidney cancer in 1988. This accounted for 2% of the total cancer mortality. The mortality rate for males was 3.4 per 100,000, and for females 3.3 per 100,000. The case-fatality rate was 39%.

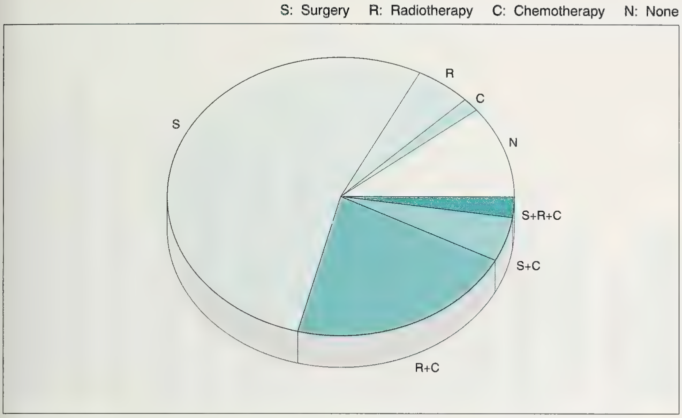
☐ **Incidence**



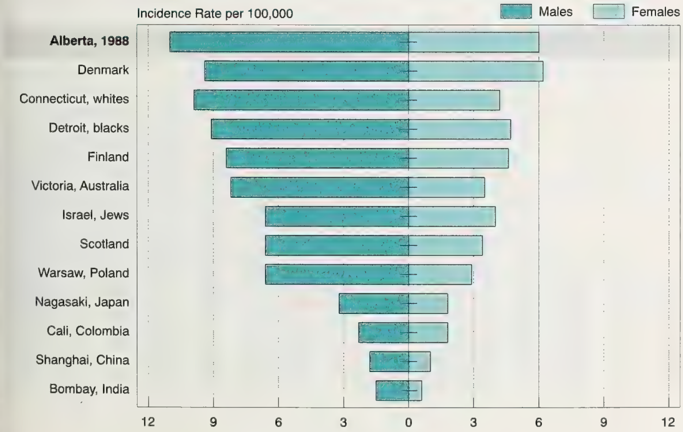
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 401 patients were alive with kidney cancer, 221 males and 180 females. This was 2% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

Surgery was the main treatment for these tumors, 76% of all patients was treated with surgery. Less than 10% was given radiotherapy. Chemotherapy was given to 14% of the patient population.

Survival

Amongst persons who died of kidney cancer in 1988, the mean survival after diagnosis was 4.4 years for males and 6.0 years for females. The relative one-year survival for patients diagnosed in 1988 was 79% for males and 66% for females.

International Comparison

Both in males and females the frequency of kidney cancer in Alberta ranks among the highest in the world. The highest rate for females is found in Iceland ($7.6/10^5$) and for males in the Northwest Territories/Yukon ($15.0/10^5$). The lowest rate in females exists in Madras, India ($0.4/10^5$), in males this is in Cluj county, Romania ($0.5/10^5$).

Nervous System Cancer

Introduction

Although rather rare amongst persons of older ages, tumors of the nervous system are the most frequent solid tumors in childhood. Exposure to irradiation and nitrate are suggested as risk factors, while parental occupation also seems to be related.

Incidence of nervous system tumors ranked 14th in males and 16th in females. In terms of mortality, they ranked 13th for both genders.

Incidence

A total of 134 tumors of the nervous system were diagnosed in 1988, 77 in males and 57 in females. The incidence rate was 6.4 per 100,000 for males and 4.8 per 100,000 for females. Age-specific incidence rates are shown in the figure.

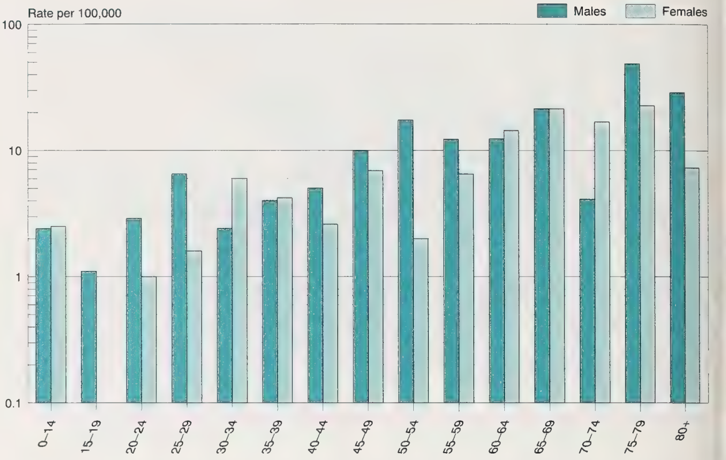
Histology

The highest percentage of these tumors were diagnosed as glioblastoma multiforme (54%). Astrocytomas accounted for 16% of cases, while oligodendrogliomas and medulloblastomas each occurred in 5% of cases. No histologic confirmation was available in 8% of cases.

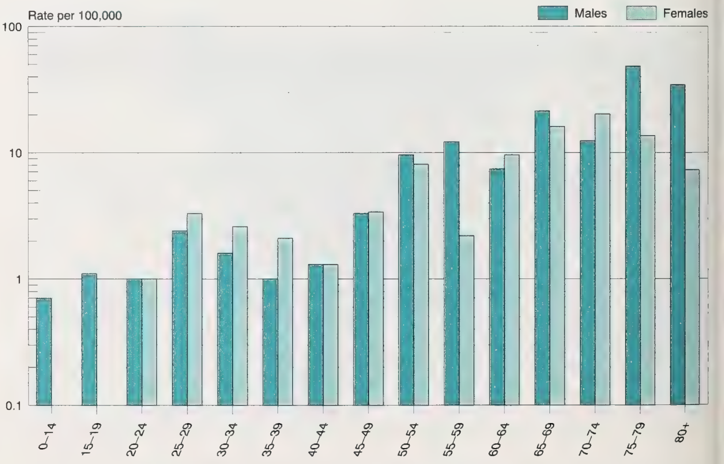
Mortality

Ninety patients (50 males and 40 females) died because of these tumors in 1988. This was 3% of the total cancer mortality. The mortality rate was 4.2 per 100,000 for males and 3.3 per 100,000 for females. The case-fatality rate was 67%.

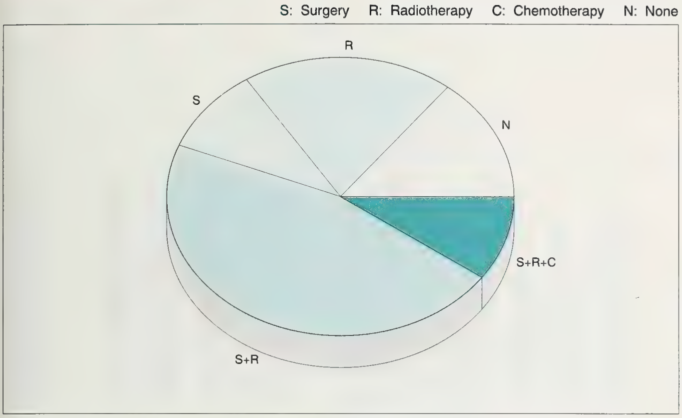
☐ Incidence



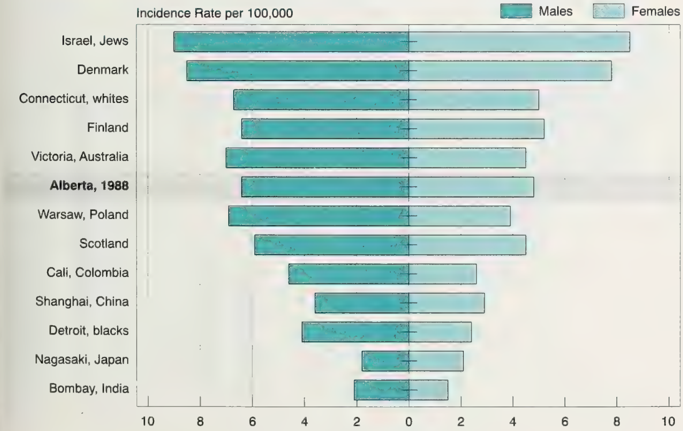
☐ Mortality



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 217 patients (109 females and 108 males) were known to be alive with a nervous system tumor. This was 1% of all cancer patients.

Treatment

Radiotherapy was used in 75% of the patients, mostly in combination with surgery. Chemotherapy was given to 11% of patients, usually in combination with other treatment modalities.

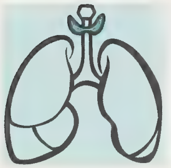
Survival

Amongst persons who died of cancer to the nervous system in 1988, the mean survival after diagnosis was 1.9 years for males and 3 years for females. The one-year survival for patients diagnosed in 1988 was 56% for males and 43% for females.

International Comparison

The incidence rate of these tumors in Alberta, compared to other countries, is in the middle range. The highest frequencies occur in Jews in Israel: in males among European/American born Jews ($10.9/10^5$) in females among African/Asian born Jews ($15.7/10^5$). The lowest rate for males is found in the Neth. Antilles ($0.5/10^5$), in females this is in Nagpur, India ($0.1/10^5$).

Thyroid Cancer



Introduction

Thyroid cancers are among the few cancers that typically occur more frequently in females than in males. This suggests that hormonal factors may play a role. Exposure to irradiation is an established risk factor.

Thyroid cancer ranked eighth least common for females and second least common for males. Mortality from thyroid cancer was second lowest for both males and females.

Incidence

In 1988, 84 thyroid cancers were diagnosed, representing 1% of all newly diagnosed tumors (excluding non-melanoma skin cancer). The male/female ratio was 0.5, 55 tumors occurred in females and 29 in males. The incidence rate was 2.4 per 100,000 for males and 4.6 per 100,000 for females. Age-specific incidence rates are shown in the figures.

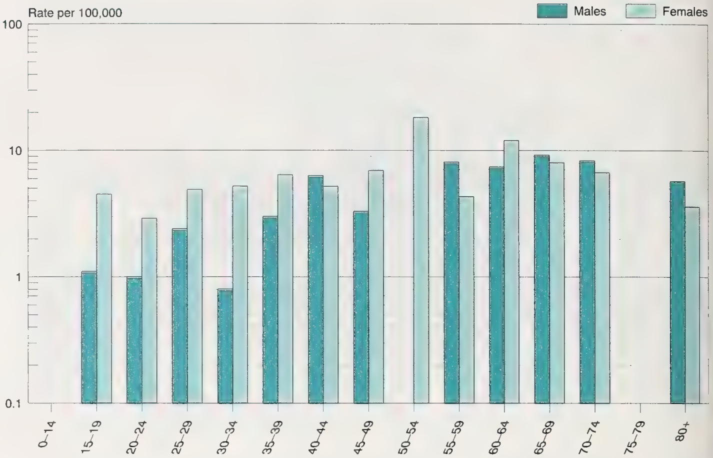
Histology

The majority of cases were papillary carcinomas (69%). Follicular carcinoma was diagnosed in 11 patients. Medullary carcinoma occurred in 4 cases.

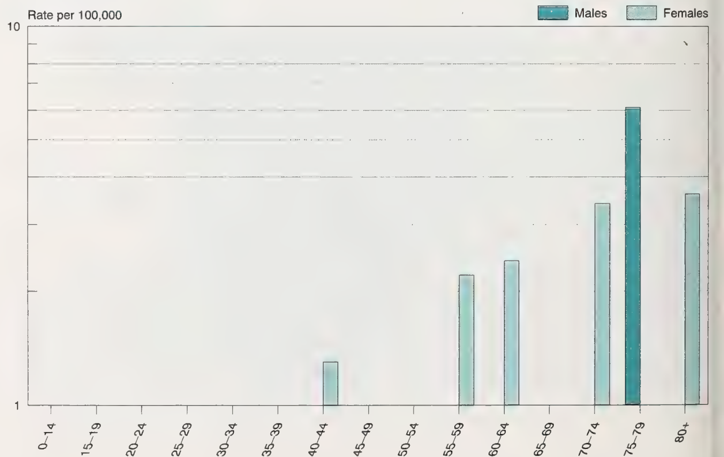
Mortality

Only 6 patients (5 women and 1 man) died from thyroid cancer in 1988, which resulted in a mortality rate of 0.1 per 100,000 for males and 0.4 per 100,000 for females. The case-fatality rate was only 7%.

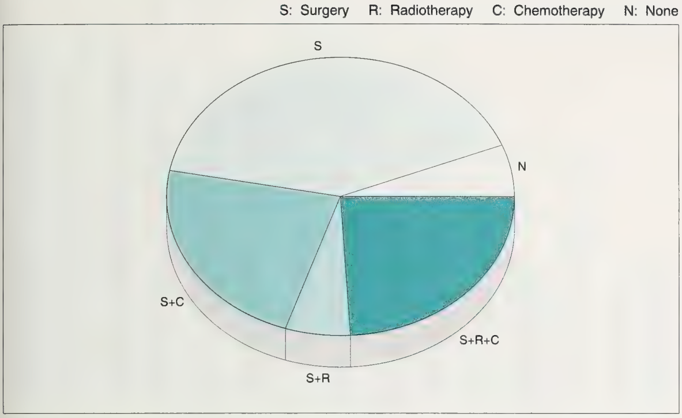
☐ **Incidence**



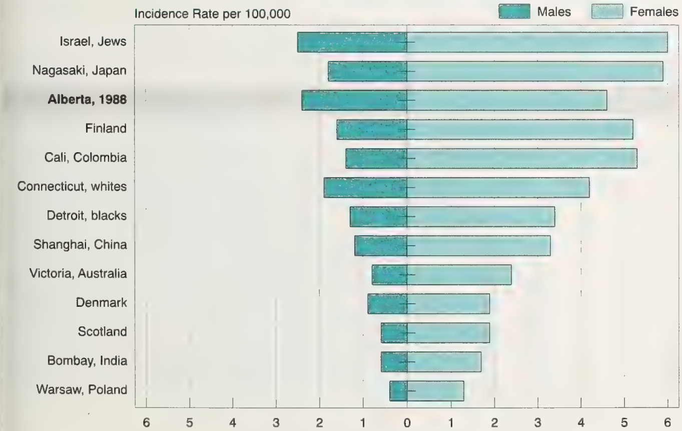
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 474 patients were alive with thyroid cancer. This was 2% of all prevalent cancers (excluding non-melanoma skin cancer).

Treatment

Surgery is the most important treatment modality for thyroid cancer, 93% of the patients were operated upon. Half of these patients received chemotherapy in combination with surgery.

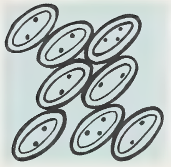
Survival

The one man who died of thyroid cancer in 1988 had lived 5.7 years since his diagnosis. The mean interval between diagnosis and death for the women who died of thyroid cancer in 1988 was 2.4 years. The one year relative survival for patients diagnosed in 1988 was 100% in males and 96% in females.

International Comparison

The frequency of thyroid cancers in Alberta, both in males and in females, ranks in the middle range internationally. In males, the highest frequency is found in Chinese in Hawaii (8.8/10^5), and the lowest rate in Szabolcs, Hungary (0.2/10^5). For females these are 18.2/10^5 (in Filipino's in Hawaii) and 0.8/10^5 (in the Northwest Territories) respectively.

Non-Hodgkin Lymphoma



Introduction

This group of malignant disorders is a mixed group of tumors originating in the lymph nodes and the lymphatic system. Little is known about the etiology of these tumors.

Non-Hodgkin lymphomas ranked as the eighth most frequently occurring cancer for females and seventh for males. Mortality rates were ninth highest for males and seventh highest for females.

Incidence

A total of 248 of these tumors were diagnosed in 1988, 132 in males and 116 in females. This was 3% of all cancers (excluding nonmelanoma skin cancer). The incidence rate was 11.0 per 100,000 for males and 9.7 per 100,000 for females. Age-specific incidence rates are shown in the figure.

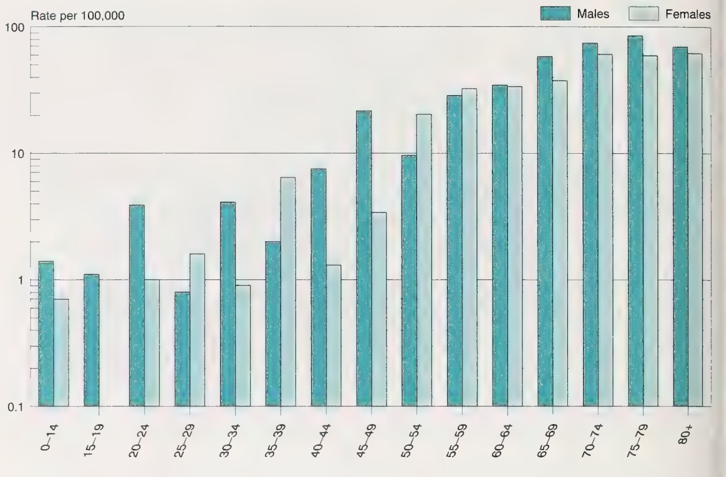
Histology

Most frequently these tumors were classified as an unspecified malignant lymphoma (40%). Nodular lymphomas were described in 41 patients (17%), while lymphocytic lymphomas occurred in 37 cases and immunoblastic Non-Hodgkin lymphomas in 22 patients. Mucosis fungoides was diagnosed in 5 patients.

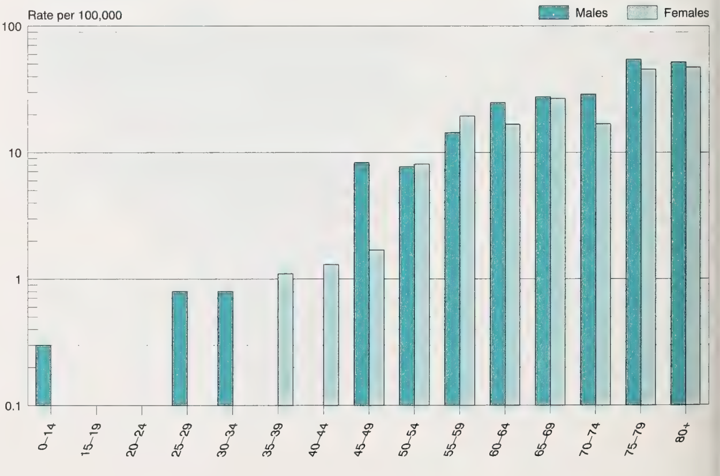
Mortality

A total of 124 patients died because of a Non-Hodgkin lymphomas in 1988, 63 males and 61 females. This accounted for 4% of the total cancer mortality. The mortality rate was similar for males and females, 5.2 per 100,000 and 5.1 per 100,000 respectively. The case-fatality was 50%.

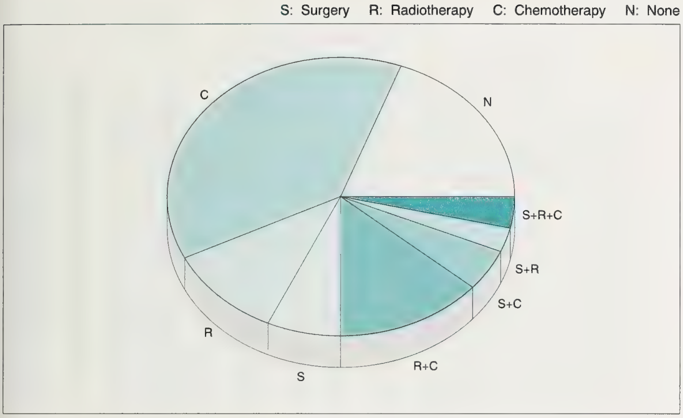
☐ Incidence



☐ Mortality



☐ Method of Treatment



Prevalence

At the mid-point of 1988, 419 patients were alive with a Non-Hodgkin lymphoma.

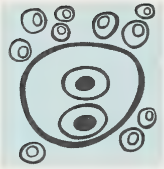
Treatment

Chemotherapy only was used to treat 38% of patients. A further 22% received chemotherapy in combination with other treatment modalities. 11% of patients were treated with radiotherapy only and 7% with surgery only. In 20% of patients either none of these treatment modalities were given, or no treatment was given at all.

Survival

Amongst persons who died of Non-Hodgkin lymphoma in 1988, the average period survived after diagnosis was 4.3 years for males and 5.2 years for females. The one year relative survival for patients diagnosed in 1988 was 80% for males and 77% for females.

Hodgkin's Disease



Introduction

Hodgkin's disease, like Non-Hodgkin lymphomas, are tumors of the lymph nodes and the lymphatic system. Little is known about the etiology of these tumors, although exposure to radiation and certain chemicals carry an increased risk.

Hodgkin's disease ranked as the sixth least commonly occurring cancer for males and the fourth least commonly occurring for females. Mortality rates were low, being third lowest for males and second lowest for females.

Incidence

A total of 66 patients were newly diagnosed in 1988 with Hodgkin's disease, 40 males and 26 females. This resulted in an incidence rate of 3.3 per 100,000 for males and of 2.2 per 100,000 for females. Age-specific incidence rates are shown in the figures.

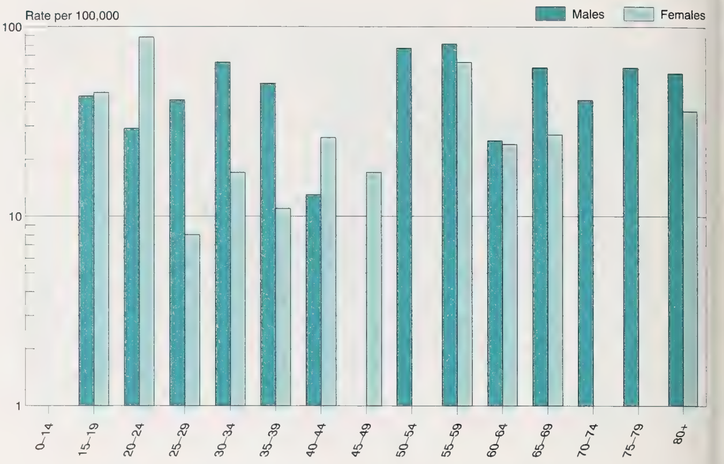
Histology

Nodular sclerosis was the most frequently diagnosed histologic type (65%). In 11 cases a mixed celluarity was described.

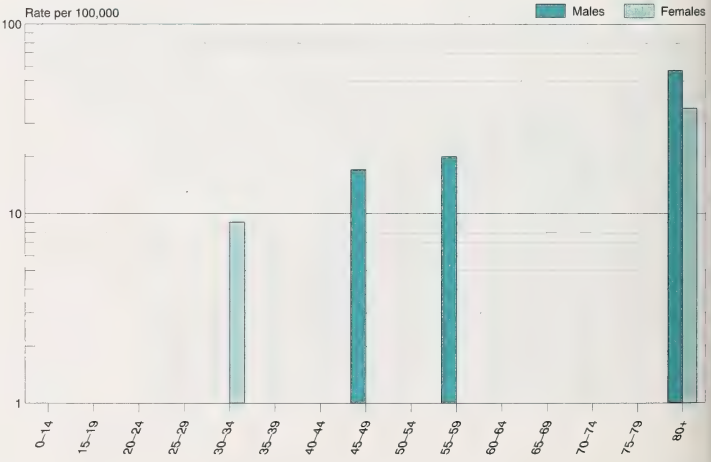
Mortality

Only five patients died from Hodgkin's disease in 1988 which accounted for a mortality rate of 0.2 per 100,000 for both males and females. The case-fatality rate was 8%.

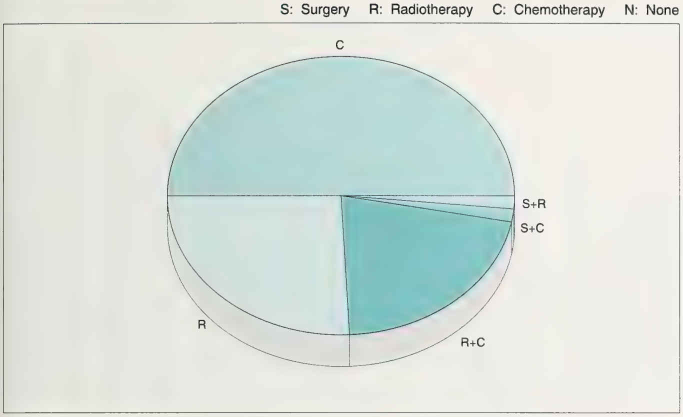
☐ **Incidence**



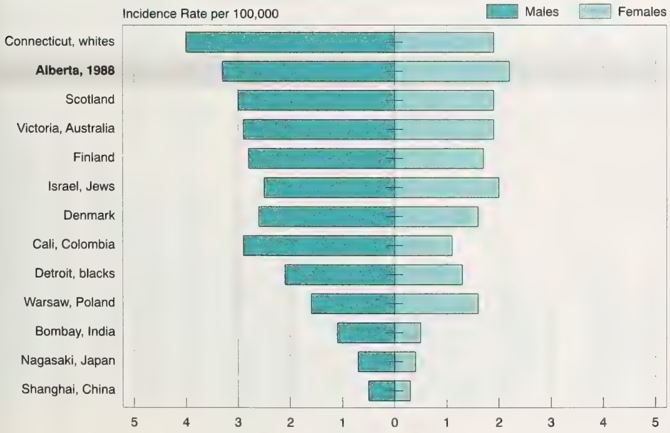
☐ **Mortality**



☐ Method of Treatment



☐ International Comparison



Prevalence

At the mid-point of 1988, 319 patients were known to be alive with Hodgkin's disease. This was 2% of all prevalent cases (excluding non-melanoma skin cancer).

Treatment

Half of the newly diagnosed patients were treated with chemotherapy only, while 26% received radiotherapy only. The remainder were treated with a combination of these two modalities.

Survival

The three men who died of Hodgkin's disease during 1988, had lived an average of only half a year after diagnosis. The two women who died of this disease in 1988 had lived an average of 3.5 years after diagnosis.

The one year relative survival for patients diagnosed in 1988 was 90% in males and 96% in females.

International Comparison

The frequency of Hodgkin's disease in Alberta, compared to other countries, is in the middle range. The highest incidence rates are found in Quebec (for males; $4.8/10^5$) and in Neuchâtel, Switzerland (for females; $3.9/10^5$). The lowest rates reported, both in males and in females, occur in Tianjin, China (both $0.2/10^5$).

Leukemia

Introduction

This group is a mixture of chronic and acute leukemias of lymphoid and myeloid origin. Apart from the effects of exposure to radiation and to certain chemicals, not much is known about the etiology of this group of diseases.

Leukemias ranked as the tenth least commonly occurring for males and as the eleventh least commonly occurring for females. Mortality rates for leukemia were eighth highest for both females and males.

Incidence

A total of 160 patients were diagnosed with leukemia in 1988, 91 males and 69 females. This resulted in an incidence rate of 7.5 per 100,000 for males and 5.8 for females. Age-specific incidence rates are shown in the figure.

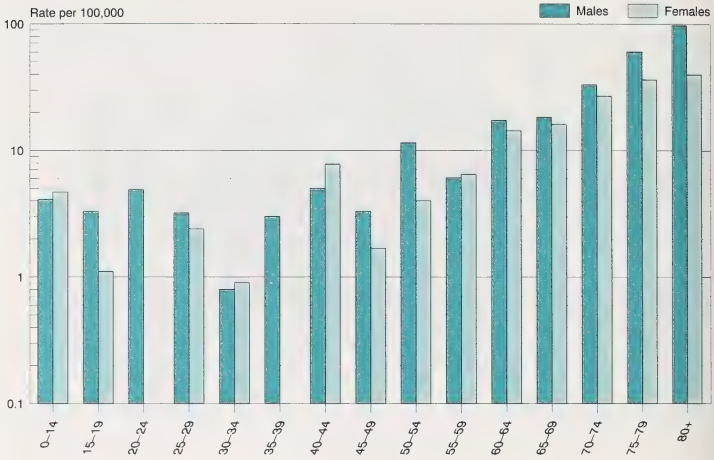
Histology

In 82 cases (51%) an acute leukemia was diagnosed, while 71 patients (44%) had a chronic leukemia. Of the acute leukemias, 35 were lymphocytic and 33 myelocytic. In the group of chronic leukemias, 42 were classified as lymphoid and 28 as myeloid.

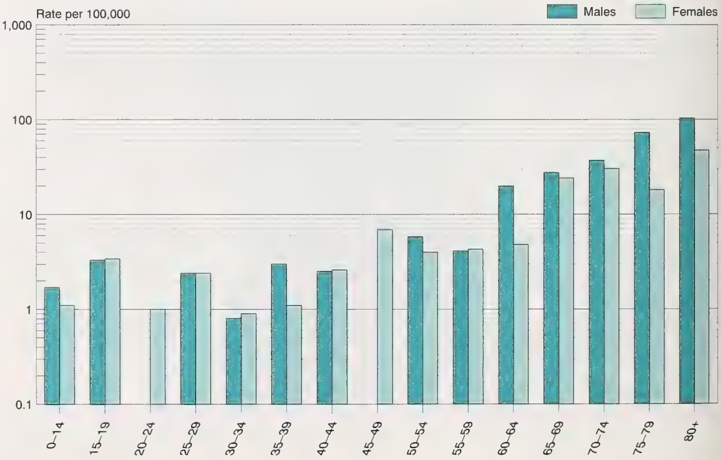
Mortality

In 1988, 137 patients died of leukemia, 78 males and 59 females. This was 4% of the total cancer mortality. The mortality rate was 6.5 per 100,000 for males and 4.9 per 100,000 for females. The case-fatality rate was 86%, the highest of all haematological neoplasms.

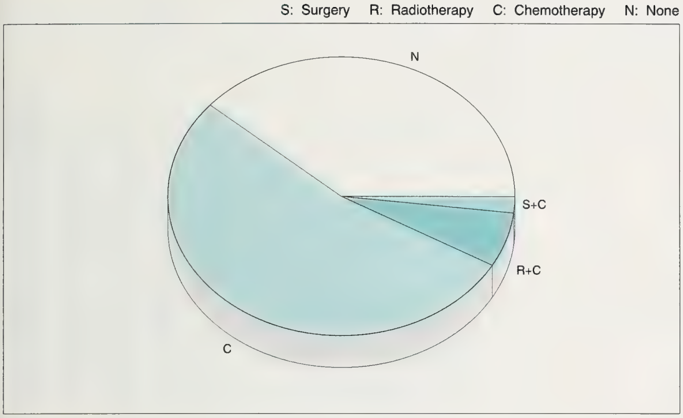
☐ **Incidence**



☐ **Mortality**



☐ Method of Treatment



Prevalence

At the mid-point of 1988, 256 patients with leukemia were known to be alive. This was 1% of all prevalent cancer cases (excluding non-melanoma skin cancer).

Treatment

In 38% of the patients no treatment was given (or treatment was unknown). In all the patients known to have been treated, chemotherapy was the modality of choice. In 6%, chemotherapy was combined with radiotherapy.

Survival

Amongst persons dying of leukemia during 1988, the average period survived after diagnosis was 3.1 years for males and 3.6 years for females. The one year relative survival for patients diagnosed in 1988 was 61% in males and 65% in females.

Unknown Primary Tumor

Introduction

This group of tumors, in itself rather interesting, is a mixture of cancers originating in different organs. Either the primary tumor was too small to be detected, although distant spread had occurred, or the malignancy had spread so extensively throughout the body at the time of diagnosis, that no further investigations could be done.

Incidence

In 1988, the primary cancer was unknown in 229 patients, 131 males and 98 females. This accounted for 3% of all incident cases (except non-melanoma skin cancer). There is a striking age relationship, with 66% of the unknown primaries being diagnosed in patients over 65. Age-specific incidence rates are shown in the figure.

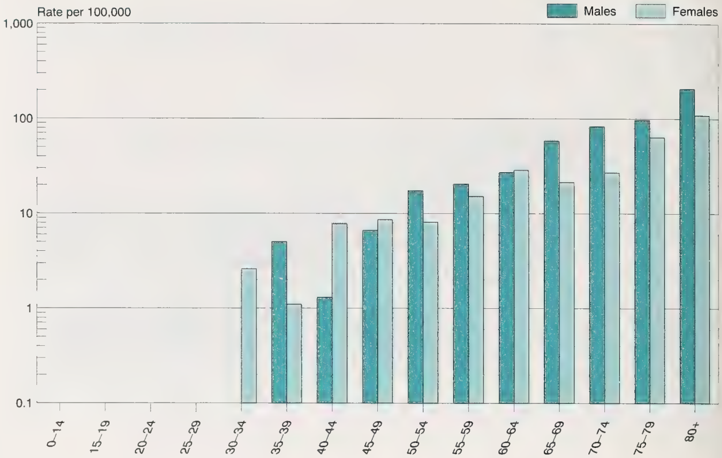
Histology

The majority of unknown primary tumors were diagnosed as adenocarcinoma (44%). In 57 cases (25%), the tumor was described as "carcinoma not-otherwise specified". No histology was available in 26 patients (11%).

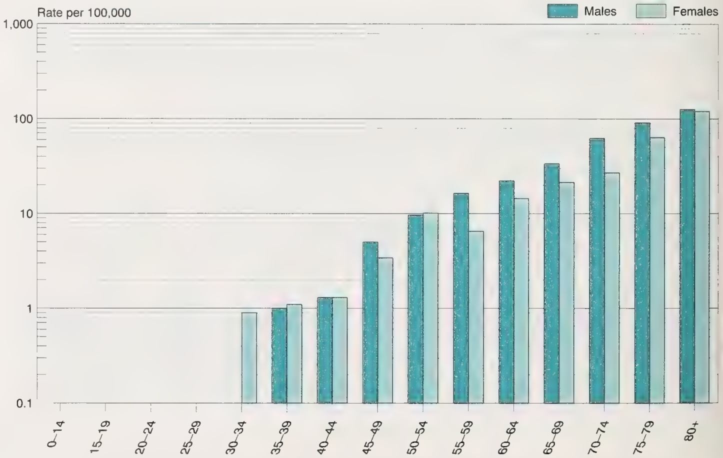
Mortality

A total of 174 patients with an unknown primary died in 1988. This accounted for 5% of all cancer deaths. The case-fatality rate was 75%. Although this was high, it was less than in esophageal and/or pancreatic cancer.

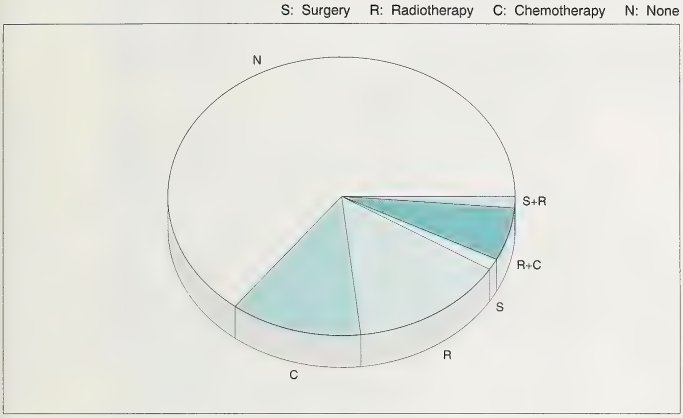
☐ Incidence



☐ Mortality



☐ Method of Treatment



Prevalence

At the mid-point of 1988, 93 patients were alive with a malignant tumor of which the origin was unknown.

Treatment

In 64% of the patients with an unknown primary tumor, it was unknown which, if any, treatment the patient had received. Probably as palliation, 14% of patients were treated with radiotherapy and 12% received chemotherapy, both as a single modality.

Survival

Amongst persons dying of an unknown primary tumor in 1988, the mean period survived after diagnosis was 2.3 years for males and 3.3 years for females. This resembles the period survived after the diagnosis of colon cancer, for example. The one-year relative survival for patients diagnosed in 1988 with an unknown primary was 30% for males and 29% for females.

Appendices

Appendix I:
Geography and Demography of Alberta

The Province of Alberta lies between latitudes 49° and 60° North and 110° and 120° West. From north to south, the province is 1,217 kilometres and the east/west dimension ranges from 293 to 650 kilometres. Its total area is 638,233 square kilometres and the province contains more than 30% of the occupied agricultural land of Canada.

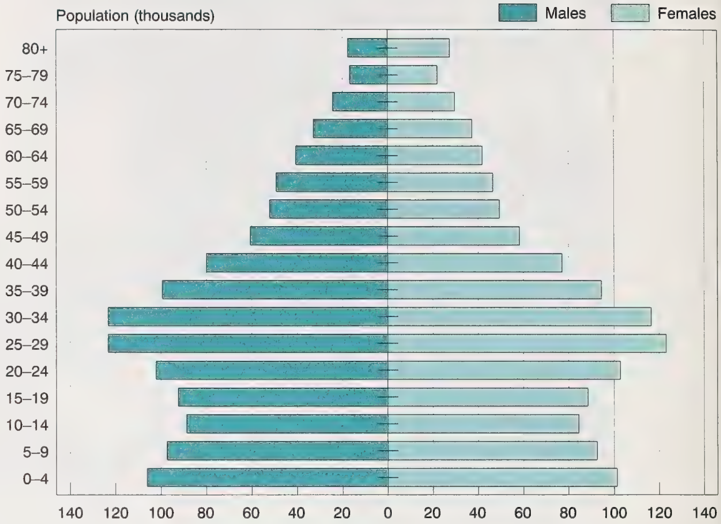
The climate of Alberta is continental with mean January temperatures ranging from –8°C in the south-west of the province to –25°C in the north-west. Mean July temperatures range from 15°C to 20°C.

The population, as enumerated at the 1986 census, consisted of 1,173,785 females and 1,192,045 males, representing a 62% increase over the 1966 population. It was estimated that the population had grown to 2.4 million by 1988. The age distribution of the population is shown. The table provides estimates of the population within each age category and how these compare with the standard world population that was used to calculate world population age-standardized rates. Estimates from the 1986 census indicate that life expectancy at birth is 79.7 years for females and 73.6 years for males. Females aged 40 years have an anticipated life expectancy of 41.2 years and the corresponding value for males is 36.3.

Just over three quarters of the population is urban and over half live in the two largest cities of Edmonton and Calgary. About 43% of the population are of British extraction, while other major ethnic groups include German (13%), Ukrainian (8%), Asian (8%), French (6%) and aboriginal peoples (3%).

The main economic activity of the past has been related to agriculture and animal husbandry and this remains very important. Since the discovery of oil some 40 years ago, oil extraction and the associated petrochemical industry have become a dominant feature of Alberta's economy.

☐ Alberta Population Pyramid (1988)



☐ Comparison of Population Distributions: Alberta 1988 and the Standard World Population

	Alberta 1988				
Age Category	*Males 1000's*	*%*	*Females 1000's*	*%*	*Standard World Population (1000's)*
0-4	106	(8.8)	101	(8.5)	12
5-9	97	(8.1)	92	(7.7)	10
10-14	89	(7.4)	84	(7.1)	9
15-19	92	(7.7)	88	(7.4)	9
20-24	102	(8.5)	103	(8.6)	8
25-29	123	(10.2)	123	(10.3)	8
30-34	123	(10.2)	116	(9.8)	6
35-39	99	(8.2)	94	(7.9)	6
40-44	80	(6.6)	77	(6.5)	6
45-49	61	(5.0)	58	(4.9)	6
50-54	52	(4.3)	49	(4.1)	5
55-59	49	(4.1)	46	(3.9)	4
60-64	41	(3.4)	42	(3.5)	4
65-69	33	(2.7)	37	(3.1)	3
70-74	24	(2.0)	30	(2.5)	2
75-79	17	(1.4)	22	(1.8)	1
80+	17	(1.4)	28	(2.3)	1
Total	1192		1205		100

The resulting job opportunities produce a dynamic situation of migration to and from other parts of Canada, depending on the status of the economy. Migration from Alberta to elsewhere in Canada has exceeded the reverse exchange between 1983 and 1988.

Unemployment was estimated to be 9.8% in 1986 (the national average was 9.5%). Managerial, professional and clerical occupations accounted for 47% of all employment while 18% were employed in primary occupations and processing. 13% were involved in service industries. Per capita income was $17,504 in 1986, second in Canada only to Ontario. The largest exports from Alberta are crude petroleum and natural gas.

Appendix II: Definition of Site Groups (ICD-9 codes)

Group Title	*ICD-9 Codes Included in Group*
Head and Neck	140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 160, 230.0, 231.8
Esophagus	150, 230.1
Stomach	151, 230.2
Colon	153, 154.0, 230.3
Rectum	154.1, 154.2, 154.3, 154.8, 230.4, 230.5, 230.6
Liver	155
Gallbladder And Biliary Tract	156, 230.8
Pancreas	157
Larynx	161, 231.0
Lung	162, 231.1, 231.2
Bone, Connective Tissue	170, 171
Melanoma	172
Non Melanoma Skin	173, 232
Breast (female)	174, 233.0 (F)
Cervix Uteri - Invasive	180
Endometrium	182
Ovary	183
Testis	186
Prostate	185, 233.4
Bladder	188, 233.7
Kidney	189, 233.9
Nervous System	191, 192
Thyroid	193
Non-Hodgkin Lymphoma	200, 202
Hodgkin's Disease	201
Leukaemia	204, 205, 206, 207, 208
Unknown Primary Site	196, 197, 198, 199, 234.9

Appendix III: Incidence – Age Specific Numbers and Rates

Age-Specific Numbers (Females)

		Age Groups														
ICD-9	Site	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	All Ages
140	Lip	0	0	0	0	0	0	0	0	1	0	2	3	4	1	5	16
141	Tongue	0	0	0	0	0	0	0	0	0	1	1	4	3	2	2	13
142	Major Salivary Glands	0	0	0	0	0	0	0	0	1	0	2	0	0	1	1	5
143	Gum	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
144	Floor of Mouth	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	5
145	Other Mouth	0	0	0	1	0	0	0	1	0	0	1	1	1	0	0	5
146	Oropharynx	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
147	Nasopharynx	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	4
148	Hypopharynx	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	3
149	Pharynx Unspecified	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3
150	Esophagus	0	0	0	0	0	0	0	0	1	5	0	0	0	2	0	8
151	Stomach	0	0	0	0	2	1	0	2	2	4	5	5	10	4	15	50
152	Small Intestine	0	0	0	0	0	0	2	0	0	1	1	2	3	2	5	16
153	Colon	0	1	0	0	0	3	3	5	13	19	20	26	46	27	66	229
154	Rectum	0	0	0	0	1	2	2	4	7	5	15	17	17	12	27	109
155	Liver	1	0	0	0	0	0	1	1	0	0	0	0	1	4	4	12
156	Gallbladder etc.	0	0	0	0	0	0	0	1	1	1	3	4	10	7	8	35
157	Pancreas	0	0	0	0	1	1	2	2	3	9	3	13	10	7	23	74
158	Peritoneum etc.	0	0	2	0	0	0	0	0	0	0	0	1	2	1	1	7
159	Other Digestive Tract	0	0	0	0	0	0	0	0	0	0	1	1	0	3	5	10
160	Nose, Sinuses etc.	0	0	0	0	0	0	1	0	0	1	1	1	0	2	0	6
161	Larynx	0	0	0	0	0	1	0	0	0	2	4	4	0	0	1	12
162	Bronchus and Lung	0	0	0	1	1	2	9	12	29	34	50	66	52	30	31	317
163	Pleura	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
164	Thymus, Heart etc.	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
165	Other Thoracic Organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	Bone	2	3	2	1	0	0	0	0	2	0	1	0	0	2	2	15
171	Connective Tissue	2	0	1	1	0	2	0	1	2	1	2	5	4	0	3	24
172	Melanoma of Skin	0	2	4	1	10	7	14	7	14	9	6	2	6	4	8	94
173	Other Skin	1	0	3	16	36	50	61	79	98	109	105	158	126	129	239	1210
174	Female Breast	0	0	0	11	25	40	79	96	100	92	118	124	108	90	99	982
179	Uterus, Unspecified	0	0	0	0	0	0	0	0	1	0	1	0	1	2	3	8
180	Cervix Uteri	0	0	0	5	11	13	21	12	8	7	6	9	7	2	3	104
181	Placenta	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
182	Body of Uterus	0	0	0	0	3	7	5	7	23	35	39	38	26	18	15	216
183	Ovary etc.	0	0	4	3	5	7	7	10	16	11	20	13	20	14	13	143
184	Other Female Genital	0	0	0	0	0	3	2	2	3	3	1	0	2	2	6	24
188	Bladder	0	0	1	1	1	1	1	4	3	2	11	12	13	13	12	75
189	Other Urinary	1	0	0	0	0	1	2	2	3	11	11	12	7	10	12	72
190	Eye	0	0	0	0	0	0	0	1	1	2	1	1	1	0	0	7
191	Brain	5	0	1	2	7	4	2	4	1	3	6	7	5	5	2	54
192	Nervous System	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
193	Thyroid Gland	0	4	3	6	6	6	4	4	9	2	5	3	2	0	1	55
194	Other Endocrine Glands	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	3
195	Other and Ill-defined	2	0	0	0	0	0	1	0	1	0	0	1	0	0	3	8
199	Mal Neoplasm Unspecified	0	0	0	0	3	1	6	5	4	7	12	8	8	14	30	98
200	Lymphosarcoma etc.	0	0	0	0	0	2	1	1	5	4	4	6	3	5	9	40
201	Hodgkin's Disease	0	4	9	1	2	1	2	1	0	3	1	1	0	0	1	26
202	Other Reticuloses	2	0	1	2	1	4	0	1	5	11	10	8	15	8	8	76
203	Multiple Myeloma	0	0	0	0	0	0	1	2	2	1	4	3	7	4	3	27
204	Lymphoid Leukaemia	13	1	0	2	1	0	1	0	1	1	2	0	2	4	6	34
205	Myeloid Leukaemia	0	0	0	1	0	0	4	1	1	1	4	4	3	4	4	27
206	Monocytic Leukaemia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
207	Other Leukaemia	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
208	Leukaemia Cell Unspecified	0	0	0	0	0	0	1	0	0	0	0	2	2	0	1	6
233.1	In Situ: Cervix	1	8	49	143	116	77	39	28	10	6	5	1	3	2	2	490
230-4	In Situ: Other	0	2	0	2	10	14	19	12	18	27	29	29	27	20	35	244
	Total	**32**	**26**	**82**	**200**	**242**	**251**	**295**	**308**	**394**	**434**	**513**	**601**	**560**	**458**	**722**	**5118**

Incidence – Age-Specific Numbers (Males)

		Age Groups															
ICD-9	*Site*	*0-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75-79*	*80+*	*All Ages*
140	Lip	0	0	0	0	1	2	2	3	3	7	6	11	15	7	13	70
141	Tongue	0	0	0	0	1	0	1	0	1	4	2	3	2	0	1	15
142	Major Salivary Glands	1	0	0	0	0	0	0	0	0	4	2	2	1	2	1	13
143	Gum	0	0	0	0	0	0	0	1	0	2	0	0	0	0	1	4
144	Floor of Mouth	0	0	0	0	0	0	1	0	2	2	2	1	1	0	0	9
145	Other Mouth	0	0	1	1	1	0	0	0	0	0	1	0	2	0	3	9
146	Oropharynx	0	0	0	0	0	0	2	3	0	0	4	1	2	3	1	16
147	Nasopharynx	0	0	0	0	0	1	4	0	0	0	1	1	1	1	0	9
148	Hypopharynx	0	0	0	0	0	0	0	1	0	3	1	3	1	0	0	9
149	Pharynx Unspecified	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	5
150	Esophagus	0	0	0	1	0	0	1	0	5	4	5	7	6	3	5	37
151	Stomach	0	0	0	1	1	0	4	1	6	10	9	18	14	23	18	105
152	Small Intestine	0	0	0	0	0	0	0	0	1	2	0	2	1	2	2	10
153	Colon	0	0	0	1	2	4	5	7	17	26	42	47	50	42	44	287
154	Rectum	0	0	0	1	1	2	7	11	19	21	23	27	25	25	31	193
155	Liver	1	0	0	0	0	0	2	2	1	3	5	6	3	4	4	31
156	Gallbladder etc.	0	0	0	0	2	0	0	0	1	5	3	1	1	2	2	17
157	Pancreas	0	0	0	0	1	1	5	3	6	7	11	16	19	10	28	107
158	Peritoneum etc.	2	0	0	0	0	0	0	0	0	1	0	0	1	0	1	5
159	Other Digestive Tract	0	0	0	0	0	1	0	0	0	0	0	0	2	1	5	9
160	Nose, Sinuses etc.	0	0	0	0	1	2	1	0	0	1	2	0	0	0	1	8
161	Larynx	0	0	0	0	0	1	0	1	6	9	7	12	11	4	6	57
162	Bronchus and Lung	1	0	0	0	2	1	10	15	39	54	97	105	99	93	91	607
163	Pleura	0	0	0	0	0	0	0	1	1	5	1	0	4	0	1	13
164	Thymus, Heart etc.	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	3
165	Other Thoracic Organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	Bone	1	3	1	1	2	1	1	0	0	1	1	1	1	0	2	16
171	Connective Tissue	3	1	0	1	2	1	3	0	0	1	1	2	0	0	3	18
172	Melanoma of Skin	0	1	1	5	8	7	6	12	2	13	8	7	1	3	3	77
173	Other Skin	1	2	5	8	29	40	67	72	84	145	169	208	181	150	183	1344
175	Male Breast	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	4
185	Prostate	0	0	0	0	0	0	0	2	10	38	46	111	146	132	170	655
186	Testis	0	2	5	13	15	8	6	3	2	0	1	0	3	0	0	58
187	Penis, Male Genital	0	0	0	0	0	0	0	0	0	2	3	3	1	1	2	12
188	Bladder	0	0	0	1	1	4	4	4	3	25	34	27	30	30	32	195
189	Other Urinary	2	1	0	0	3	2	7	9	14	18	17	17	15	13	15	133
190	Eye	1	1	0	0	0	0	0	0	1	0	2	1	1	3	1	11
191	Brain	6	1	2	8	3	4	3	6	9	6	5	7	1	8	5	74
192	Nervous System	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
193	Thyroid Gland	0	1	1	3	1	3	5	2	0	4	3	3	2	0	1	29
194	Other Endocrine Glands	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	3
195	Other and Ill-defined	0	0	0	0	0	0	0	0	0	0	1	2	0	1	1	5
199	Mal Neoplasm Unspecified	0	0	0	0	0	5	1	4	9	10	11	19	20	16	36	131
200	Lymphosarcoma etc.	3	0	3	1	0	0	1	4	2	2	7	6	6	4	3	42
201	Hodgkin's Disease	0	4	3	5	8	5	1	0	4	4	1	2	1	1	1	40
202	Other Reticuloses	1	1	1	0	5	2	5	9	3	12	7	13	12	10	9	90
203	Multiple Myeloma	0	0	0	0	0	0	0	1	1	4	5	5	7	8	14	45
204	Lymphoid Leukaemia	10	2	2	0	0	0	0	0	4	3	2	3	3	4	11	44
205	Myeloid Leukaemia	0	1	3	3	1	2	4	1	2	0	4	3	2	5	5	36
206	Monocytic Leukaemia	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
207	Other Leukaemia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208	Leukaemia Cell Unspecified	0	0	0	1	0	1	0	1	0	0	1	0	3	1	1	9
230-4	In Situ: Other	0	0	1	2	5	9	4	10	6	15	25	34	32	16	23	182
	Total	**36**	**22**	**30**	**58**	**96**	**109**	**165**	**190**	**265**	**474**	**579**	**739**	**731**	**630**	**782**	**4906**

Incidence – Age-Specific Rates per 100,000 (Females)

		Age Groups															
ICD-9	*Site*	*0-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75-79*	*80+*	*All Ages*
140	Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	4.8	8.0	13.5	4.5	18.2	1.3
141	Tongue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.4	10.7	10.1	9.1	7.3	1.1
142	Major Salivary Glands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	4.8	0.0	0.0	4.5	3.6	0.4
143	Gum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	10.9	0.3
144	Floor of Mouth	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	2.0	2.2	0.0	2.7	0.0	0.0	3.6	0.4
145	Other Mouth	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.7	0.0	0.0	2.4	2.7	3.4	0.0	0.0	0.4
146	Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	3.4	0.0	0.0	0.2
147	Nasopharynx	0.0	0.0	1.0	0.0	0.0	0.0	1.3	0.0	2.0	0.0	0.0	2.7	0.0	0.0	0.0	0.3
148	Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.7	0.0	0.0	3.6	0.3
149	Pharynx Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.2	0.0	0.0	0.0	0.0	3.6	0.3
150	Esophagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	10.8	0.0	0.0	0.0	9.1	0.0	0.7
151	Stomach	0.0	0.0	0.0	0.0	1.7	1.1	0.0	3.4	4.0	8.6	12.0	13.4	33.7	18.2	54.5	4.2
152	Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	2.2	2.4	5.4	10.1	9.1	18.2	1.3
153	Colon	0.0	1.1	0.0	0.0	0.0	3.2	3.9	8.6	26.3	40.9	47.8	69.7	154.9	122.7	240.0	19.2
154	Rectum	0.0	0.0	0.0	0.0	0.9	2.1	2.6	6.9	14.2	10.8	35.9	45.6	57.2	54.5	98.2	9.1
155	Liver	0.4	0.0	0.0	0.0	0.0	0.0	1.3	1.7	0.0	0.0	0.0	0.0	3.4	18.2	14.5	1.0
156	Gallbladder etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.0	2.2	7.2	10.7	33.7	31.8	29.1	2.9
157	Pancreas	0.0	0.0	0.0	0.0	0.9	1.1	2.6	3.4	6.1	19.4	7.2	34.9	33.7	31.8	83.6	6.2
158	Peritoneum etc.	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	6.7	4.5	3.6	0.6
159	Other Digestive Tract	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.7	0.0	13.6	18.2	0.8
160	Nose, Sinuses etc.	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	2.2	2.4	2.7	0.0	9.1	0.0	0.5
161	Larynx	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	4.3	9.6	10.7	0.0	0.0	3.6	1.0
162	Bronchus and Lung	0.0	0.0	0.0	0.8	0.9	2.1	11.7	20.6	58.7	73.3	119.6	176.9	175.1	136.4	112.7	26.6
163	Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.1
164	Thymus, Heart etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.1
165	Other Thoracic Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	Bone	0.7	3.4	1.9	0.8	0.0	0.0	0.0	0.0	4.0	0.0	2.4	0.0	0.0	9.1	7.3	1.3
171	Connective Tissue	0.7	0.0	1.0	0.8	0.0	2.1	0.0	1.7	4.0	2.2	4.8	13.4	13.5	0.0	10.9	2.0
172	Melanoma of Skin	0.0	2.3	3.9	0.8	8.6	7.4	18.2	12.0	28.3	19.4	14.4	5.4	20.2	18.2	29.1	7.9
173	Other Skin	0.4	0.0	2.9	13.0	30.9	53.0	79.1	135.7	198.4	234.9	251.2	423.6	424.2	586.4	869.1	101.5
174	Female Breast	0.0	0.0	0.0	8.9	21.5	42.4	102.5	164.9	202.4	198.3	282.3	332.4	363.6	409.1	360.0	82.4
179	Uterus, Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.4	0.0	3.4	9.1	10.9	0.7
180	Cervix Uteri	0.0	0.0	0.0	4.1	9.5	13.8	27.2	20.6	16.2	15.1	14.4	24.1	23.6	9.1	10.9	8.7
181	Placenta	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
182	Body of Uterus	0.0	0.0	0.0	0.0	2.6	7.4	6.5	12.0	46.6	75.4	93.3	101.9	87.5	81.8	54.5	18.1
183	Ovary etc.	0.0	1.1	3.9	2.4	4.3	7.4	9.1	17.2	34.4	23.7	47.8	34.9	67.3	63.6	50.9	12.2
184	Other Female Genital	0.0	0.0	0.0	0.0	0.0	3.2	2.6	3.4	6.1	6.5	2.4	0.0	6.7	9.1	21.8	2.0
188	Bladder	0.0	0.0	1.0	0.8	0.9	1.1	1.3	6.9	6.1	4.3	26.3	32.2	43.8	59.1	43.6	6.3
189	Other Urinary	0.4	0.0	0.0	0.0	0.0	1.1	2.6	3.4	6.1	23.7	26.3	32.2	23.6	45.5	43.6	6.0
190	Eye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.0	4.3	2.4	2.7	3.4	0.0	0.0	0.6
191	Brain	1.8	0.0	1.0	1.6	6.0	4.2	2.6	6.9	2.0	6.5	14.4	18.8	16.8	22.7	7.3	4.5
192	Nervous System	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.3
193	Thyroid Gland	0.0	4.5	2.9	4.9	5.2	6.4	5.2	6.9	18.2	4.3	12.0	8.0	6.7	0.0	3.6	4.6
194	Other Endocrine Glands	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	2.2	0.0	0.0	0.0	0.0	3.6	0.3
195	Other and Ill-defined	0.7	0.0	0.0	0.0	0.0	0.0	1.3	0.0	2.0	0.0	0.0	2.7	0.0	0.0	10.9	0.7
199	Mal Neoplasm Unspecified	0.0	0.0	0.0	0.0	2.6	1.1	7.8	8.6	8.1	15.1	28.7	21.4	26.9	63.6	109.1	8.2
200	Lymphosarcoma etc.	0.0	0.0	0.0	0.0	0.0	2.1	1.3	1.7	10.1	8.6	9.6	16.1	10.1	22.7	32.7	3.4
201	Hodgkin's Disease	0.0	4.5	8.8	0.8	1.7	1.1	2.6	1.7	0.0	6.5	2.4	2.7	0.0	0.0	3.6	2.2
202	Other Reticuloses	0.7	0.0	1.0	1.6	0.9	4.2	0.0	1.7	10.1	23.7	23.9	21.4	50.5	36.4	29.1	6.4
203	Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.4	4.0	2.2	9.6	8.0	23.6	18.2	10.9	2.3
204	Lymphoid Leukaemia	4.7	1.1	0.0	1.6	0.9	0.0	1.3	0.0	2.0	2.2	4.8	0.0	6.7	18.2	21.8	2.9
205	Myeloid Leukaemia	0.0	0.0	0.0	0.8	0.0	0.0	5.2	1.7	2.0	2.2	9.6	10.7	10.1	18.2	14.5	2.3
206	Monocytic Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.1
207	Other Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.1
208	Leukaemia Cell Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	5.4	6.7	0.0	3.6	0.5
233.1	In Situ: Cervix	0.4	9.1	47.7	116.3	99.7	81.6	50.6	48.1	20.2	12.9	12.0	2.7	10.1	9.1	7.3	41.1
230-4	In Situ: Other	0.0	2.3	0.0	1.6	8.6	14.8	24.6	20.6	36.4	58.2	69.4	77.7	90.9	90.9	127.3	20.5
	Total	**11.5**	**29.4**	**79.8**	**162.6**	**207.9**	**265.9**	**382.6**	**529.2**	**797.6**	**935.3**	**1227.3**	**1611.3**	**1885.5**	**2081.8**	**2625.5**	**429.4**

Incidence – Age-Specific Rates per 100,000 (Males)

		Age Groups															
ICD-9	*Site*	*0-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75-79*	*80+*	*All Ages*
140	Lip	0.0	0.0	0.0	0.0	0.8	2.0	2.5	5.0	5.8	14.3	14.8	33.6	62.0	42.4	74.7	5.8
141	Tongue	0.0	0.0	0.0	0.0	0.8	0.0	1.3	0.0	1.9	8.1	4.9	9.2	8.3	0.0	5.7	1.2
142	Major Salivary Glands	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	4.9	6.1	4.1	12.1	5.7	1.1
143	Gum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	4.1	0.0	0.0	0.0	0.0	5.7	0.3
144	Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	3.8	4.1	4.9	3.1	4.1	0.0	0.0	0.7
145	Other Mouth	0.0	0.0	1.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	2.5	0.0	8.3	0.0	17.2	0.7
146	Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.0	0.0	0.0	9.9	3.1	8.3	18.2	5.7	1.3
147	Nasopharynx	0.0	0.0	0.0	0.0	0.0	1.0	5.0	0.0	0.0	0.0	2.5	3.1	4.1	6.1	0.0	0.7
148	Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	6.1	2.5	9.2	4.1	0.0	0.0	0.7
149	Pharynx Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	2.0	0.0	3.1	4.1	6.1	0.0	0.4
150	Esophagus	0.0	0.0	0.0	0.8	0.0	0.0	1.3	0.0	9.6	8.1	12.3	21.4	24.8	18.2	28.7	3.1
151	Stomach	0.0	0.0	0.0	0.8	0.8	0.0	5.0	1.7	11.5	20.4	22.2	55.0	57.9	139.4	103.4	8.7
152	Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	4.1	0.0	6.1	4.1	12.1	11.5	0.8
153	Colon	0.0	0.0	0.0	0.8	1.6	4.0	6.3	11.6	32.7	53.0	103.7	143.7	206.6	254.5	252.9	23.8
154	Rectum	0.0	0.0	0.0	0.8	0.8	2.0	8.8	18.2	36.5	42.8	56.8	82.6	103.3	151.5	178.2	16.0
155	Liver	0.3	0.0	0.0	0.0	0.0	0.0	2.5	3.3	1.9	6.1	12.3	18.3	12.4	24.2	23.0	2.6
156	Gallbladder etc.	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.9	10.2	7.4	3.1	4.1	12.1	11.5	1.4
157	Pancreas	0.0	0.0	0.0	0.0	0.8	1.0	6.3	5.0	11.5	14.3	27.2	48.9	78.5	60.6	160.9	8.9
158	Peritoneum etc.	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	4.1	0.0	5.7	0.4
159	Other Digestive Tract	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	6.1	28.7	0.7
160	Nose, Sinuses etc.	0.0	0.0	0.0	0.0	0.8	2.0	1.3	0.0	0.0	2.0	4.9	0.0	0.0	0.0	5.7	0.7
161	Larynx	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.7	11.5	18.3	17.3	36.7	45.5	24.2	34.5	4.7
162	Bronchus and Lung	0.3	0.0	0.0	0.0	1.6	1.0	12.5	24.8	75.0	110.0	239.5	321.1	409.1	563.6	523.0	50.4
163	Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.9	10.2	2.5	0.0	16.5	0.0	5.7	1.1
164	Thymus, Heart etc.	0.0	1.1	0.0	0.0	0.0	0.0	1.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
165	Other Thoracic Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	Bone	0.3	3.3	1.0	0.8	1.6	1.0	1.3	0.0	0.0	2.0	2.5	3.1	4.1	0.0	11.5	1.3
171	Connective Tissue	1.0	1.1	0.0	0.8	1.6	1.0	3.8	0.0	0.0	2.0	2.5	6.1	0.0	0.0	17.2	1.5
172	Melanoma of Skin	0.0	1.1	1.0	4.1	6.5	7.0	7.5	19.8	3.8	26.5	19.8	21.4	4.1	18.2	17.2	6.4
173	Other Skin	0.3	2.2	4.9	6.5	23.5	40.2	83.9	118.8	161.5	295.3	417.3	636.1	747.9	909.1	1051.7	111.5
175	Male Breast	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.1	0.0	11.5	0.3
185	Prostate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	19.2	77.4	113.6	339.4	603.3	800.0	977.0	54.3
186	Testis	0.0	2.2	4.9	10.6	12.2	8.0	7.5	5.0	3.8	0.0	2.5	0.0	12.4	0.0	0.0	4.8
187	Penis, Male Genital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	7.4	9.2	4.1	6.1	11.5	1.0
188	Bladder	0.0	0.0	0.0	0.8	0.8	4.0	5.0	6.6	5.8	50.9	84.0	82.6	124.0	181.8	183.9	16.2
189	Other Urinary	0.7	1.1	0.0	0.0	2.4	2.0	8.8	14.9	26.9	36.7	42.0	52.0	62.0	78.8	86.2	11.0
190	Eye	0.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	4.9	3.1	4.1	18.2	5.7	0.9
191	Brain	2.1	1.1	2.0	6.5	2.4	4.0	3.8	9.9	17.3	12.2	12.3	21.4	4.1	48.5	28.7	6.1
192	Nervous System	0.3	0.0	1.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
193	Thyroid Gland	0.0	1.1	1.0	2.4	0.8	3.0	6.3	3.3	0.0	8.1	7.4	9.2	8.3	0.0	5.7	2.4
194	Other Endocrine Glands	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	6.1	0.0	0.2
195	Other and Ill-defined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	6.1	0.0	6.1	5.7	0.4
199	Mal Neoplasm Unspecified	0.0	0.0	0.0	0.0	0.0	5.0	1.3	6.6	17.3	20.4	27.2	58.1	82.6	97.0	206.9	10.9
200	Lymphosarcoma etc.	1.0	0.0	2.9	0.8	0.0	0.0	1.3	6.6	3.8	4.1	17.3	18.3	24.8	24.2	17.2	3.5
201	Hodgkin's Disease	0.0	4.3	2.9	4.1	6.5	5.0	1.3	0.0	7.7	8.1	2.5	6.1	4.1	6.1	5.7	3.3
202	Other Reticuloses	0.3	1.1	1.0	0.0	4.1	2.0	6.3	14.9	5.8	24.4	17.3	39.8	49.6	60.6	51.7	7.5
203	Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.9	8.1	12.3	15.3	28.9	48.5	80.5	3.7
204	Lymphoid Leukaemia	3.4	2.2	2.0	0.0	0.0	0.0	0.0	0.0	7.7	6.1	4.9	9.2	12.4	24.2	63.2	3.7
205	Myeloid Leukaemia	0.0	1.1	2.9	2.4	0.8	2.0	5.0	1.7	3.8	0.0	9.9	9.2	8.3	30.3	28.7	3.0
206	Monocytic Leukaemia	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
207	Other Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
208	Leukaemia Cell Unspecified	0.0	0.0	0.0	0.8	0.0	1.0	0.0	1.7	0.0	0.0	2.5	0.0	12.4	6.1	5.7	0.7
230-4	In Situ: Other	0.0	0.0	1.0	1.6	4.1	9.1	5.0	16.5	11.5	30.5	61.7	104.0	132.2	97.0	132.2	15.1
	Total	**12.3**	**23.8**	**29.4**	**47.1**	**77.9**	**109.7**	**206.5**	**313.5**	**509.6**	**965.4**	**1429.6**	**2259.9**	**3020.7**	**3818.2**	**4494.3**	**407.0**

Appendix IV:
Mortality – Age-Specific Numbers and Rates

Mortality – Age-Specific Numbers (Females)

		Age Groups															
ICD-9	Site	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	All Ages
140	Lip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141	Tongue	0	0	0	1	0	0	0	0	0	0	1	0	1	2	2	7
142	Major Salivary Glands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
143	Gum	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
144	Floor of Mouth	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
145	Other Mouth	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
146	Oropharynx	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
147	Nasopharynx	0	0	0	0	0	3	0	0	0	0	0	3	0	1	0	7
148	Hypopharynx	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
149	Pharynx Unspecified	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
150	Esophagus	0	0	0	0	0	0	0	0	1	1	1	0	1	2	0	6
151	Stomach	0	0	0	0	1	0	0	2	4	1	5	6	6	3	22	50
152	Small Intestine	0	0	0	0	0	0	0	1	0	0	0	2	2	0	4	9
153	Colon	0	0	0	0	0	2	1	4	8	9	9	15	19	17	48	132
154	Rectum	0	0	0	0	0	0	2	0	4	7	6	9	5	11	18	62
155	Liver	0	0	0	0	0	1	0	1	1	0	1	1	1	5	3	14
156	Gallbladder etc.	0	0	0	0	0	0	0	1	1	1	3	3	7	9	11	36
157	Pancreas	0	0	0	0	1	0	2	0	5	7	6	13	11	8	23	76
158	Peritoneum etc.	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3
159	Other Digestive Tract	0	0	0	0	0	0	0	0	0	0	0	2	0	3	7	12
160	Nose, Sinuses etc.	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
161	Larynx	0	0	0	0	0	0	1	0	0	1	1	2	0	0	1	6
162	Bronchus and Lung	0	0	0	0	0	0	3	5	15	27	28	48	29	36	34	225
163	Pleura	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	Thymus, Heart etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	Other Thoracic Organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	Bone	1	0	0	0	0	0	0	0	0	0	0	1	0	2	2	6
171	Connective Tissue	0	1	0	0	0	0	0	0	1	0	1	2	1	1	1	8
172	Melanoma of Skin	0	0	0	0	1	1	2	0	0	1	1	1	1	0	1	9
173	Other Skin	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	3
174	Female Breast	0	0	0	2	7	10	16	24	29	39	42	48	40	31	58	346
179	Uterus, Unspecified	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	3
180	Cervix Uteri	0	0	0	0	0	1	2	6	4	1	4	3	4	5	1	31
181	Placenta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	Body of Uterus	0	0	0	0	0	0	0	0	1	3	2	6	5	3	7	27
183	Ovary etc.	0	0	0	0	0	1	3	3	5	15	13	14	13	8	14	89
184	Other Female Genital	0	1	0	0	0	0	0	1	0	1	0	0	0	2	3	8
188	Bladder	0	0	0	0	0	0	0	0	0	1	0	3	3	1	7	15
189	Other Urinary	0	0	0	0	0	0	0	0	2	3	7	3	9	7	8	39
190	Eye	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
191	Brain	0	0	1	4	3	2	1	2	4	1	3	6	6	3	2	38
192	Nervous System	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
193	Thyroid Gland	0	0	0	0	0	0	1	0	0	1	1	0	1	0	1	5
194	Other Endocrine Glands	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
195	Other and Ill-defined	0	0	0	0	0	0	0	0	1	0	1	1	1	0	4	8
199	Mal Neoplasm Unspecified	0	0	0	0	0	0	0	0	0	0	0	1	0	5	13	19
200	Lymphosarcoma etc.	0	0	0	0	0	0	0	0	0	3	1	2	1	4	4	15
201	Hodgkin's Disease	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
202	Other Reticuloses	0	0	0	0	0	1	1	1	4	6	6	8	4	6	9	46
203	Multiple Myeloma	0	0	0	0	0	0	0	0	0	3	6	4	4	5	6	28
204	Lymphoid Leukaemia	1	2	1	2	0	0	1	0	1	0	1	3	2	1	7	22
205	Myeloid Leukaemia	2	1	1	1	1	1	1	4	1	1	1	5	5	3	5	33
206	Monocytic Leukaemia	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
207	Other Leukaemia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208	Leukaemia Cell Unspecified	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3
233.1	In Situ: Cervix	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230-4	In Situ: Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Total	**4**	**5**	**3**	**10**	**16**	**23**	**37**	**55**	**95**	**136**	**158**	**218**	**187**	**184**	**340**	**1471**

Mortality – Age-Specific Numbers (Males)

		Age Groups															
ICD-9	*Site*	*0-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75-79*	*80+*	*All Ages*
140	Lip	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3
141	Tongue	0	0	0	0	0	0	0	0	0	2	3	5	1	1	1	13
142	Major Salivary Glands	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	5
143	Gum	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
144	Floor of Mouth	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
145	Other Mouth	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5
146	Oropharynx	0	0	0	0	0	1	0	0	1	0	3	1	2	0	1	9
147	Nasopharynx	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3
148	Hypopharynx	0	0	0	0	0	0	1	0	0	2	3	1	1	0	0	8
149	Pharynx Unspecified	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	5
150	Esophagus	0	0	0	1	0	0	0	1	2	3	2	4	5	4	6	28
151	Stomach	0	0	0	1	1	0	4	2	4	5	10	16	17	16	15	91
152	Small Intestine	0	0	0	0	0	0	0	0	2	1	0	1	1	0	2	7
153	Colon	0	0	0	1	1	1	1	3	8	7	17	15	21	20	26	121
154	Rectum	0	0	0	0	1	0	4	2	4	10	15	13	22	10	29	110
155	Liver	2	1	0	0	0	1	0	3	1	2	6	5	3	3	8	35
156	Gallbladder etc.	0	0	0	0	0	0	0	2	1	2	3	1	3	1	4	17
157	Pancreas	0	0	0	0	1	0	4	3	2	11	12	15	19	14	28	109
158	Peritoneum etc.	0	0	0	0	0	0	0	0	1	2	2	1	0	2	1	9
159	Other Digestive Tract	0	0	0	0	0	1	0	0	0	0	0	0	1	1	6	9
160	Nose, Sinuses etc.	0	0	0	0	1	0	2	1	0	0	0	0	0	1	0	5
161	Larynx	0	0	0	0	0	0	0	2	1	1	1	3	4	1	4	17
162	Bronchus and Lung	0	0	0	0	1	1	3	10	24	44	78	88	95	92	90	526
163	Pleura	0	0	0	0	0	0	0	2	2	1	0	1	3	1	0	10
164	Thymus, Heart etc.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
165	Other Thoracic Organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	Bone	1	1	1	0	0	0	0	0	0	1	2	1	0	0	1	8
171	Connective Tissue	0	0	1	1	0	0	1	1	0	2	0	1	1	1	1	10
172	Melanoma of Skin	0	1	0	0	1	1	1	1	0	3	1	0	1	3	1	14
173	Other Skin	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	4
175	Male Breast	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	Prostate	0	0	0	0	0	0	1	2	0	7	13	21	44	45	87	220
186	Testis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
187	Penis, Male Genital	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	3
188	Bladder	0	0	0	0	0	0	0	1	4	3	5	6	12	10	16	57
189	Other Urinary	1	0	0	0	0	0	3	1	3	5	1	10	4	3	10	41
190	Eye	0	0	0	0	0	0	0	1	2	0	0	0	1	0	0	4
191	Brain	1	1	1	3	2	1	1	2	5	6	3	7	3	8	6	50
192	Nervous System	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193	Thyroid Gland	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
194	Other Endocrine Glands	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
195	Other and Ill-defined	0	0	0	0	0	0	0	0	0	0	1	1	0	1	2	5
199	Mal Neoplasm Unspecified	0	0	0	0	0	0	0	0	0	0	0	2	2	3	9	16
200	Lymphosarcoma etc.	0	0	0	1	0	0	0	2	1	3	1	3	2	3	4	20
201	Hodgkin's Disease	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	3
202	Other Reticuloses	1	0	0	0	1	0	0	3	3	4	9	6	5	6	5	43
203	Multiple Myeloma	0	0	0	0	1	0	0	1	0	2	4	3	7	10	9	37
204	Lymphoid Leukaemia	3	2	0	0	0	1	0	0	0	0	2	6	3	3	12	32
205	Myeloid Leukaemia	1	0	0	2	1	1	1	0	3	2	4	3	4	7	5	34
206	Monocytic Leukaemia	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
207	Other Leukaemia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208	Leukaemia Cell Unspecified	0	0	0	1	0	1	1	0	0	0	2	0	2	2	1	10
230-4	In Situ: Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	**12**	**7**	**3**	**12**	**13**	**10**	**29**	**49**	**79**	**135**	**205**	**243**	**292**	**280**	**396**	**1765**

Mortality – Age-Specific Rates per 100,000 (Females)

		Age Groups															
ICD-9	*Site*	*0-14*	*15-19*	*20-24*	*25-29*	*30-34*	*35-39*	*40-44*	*45-49*	*50-54*	*55-59*	*60-64*	*65-69*	*70-74*	*75-79*	*80+*	*All Ages*
140	Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
141	Tongue	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	3.4	9.1	7.3	0.6
142	Major Salivary Glands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
143	Gum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	3.6	0.2
144	Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.2
145	Other Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.6	0.2
146	Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	3.6	0.2
147	Nasopharynx	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	8.0	0.0	4.5	0.0	0.6
148	Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.6	0.2
149	Pharynx Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.1
150	Esophagus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.2	2.4	0.0	3.4	9.1	0.0	0.5
151	Stomach	0.0	0.0	0.0	0.0	0.9	0.0	0.0	3.4	8.1	2.2	12.0	16.1	20.2	13.6	80.0	4.2
152	Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	5.4	6.7	0.0	14.5	0.8
153	Colon	0.0	0.0	0.0	0.0	0.0	2.1	1.3	6.9	16.2	19.4	21.5	40.2	64.0	77.3	174.5	11.1
154	Rectum	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	8.1	15.1	14.4	24.1	16.8	50.0	65.5	5.2
155	Liver	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.7	2.0	0.0	2.4	2.7	3.4	22.7	10.9	1.2
156	Gallbladder etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.0	2.2	7.2	8.0	23.6	40.9	40.0	3.0
157	Pancreas	0.0	0.0	0.0	0.0	0.9	0.0	2.6	0.0	10.1	15.1	14.4	34.9	37.0	36.4	83.6	6.4
158	Peritoneum etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	3.6	0.3
159	Other Digestive Tract	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	13.6	25.5	1.0
160	Nose, Sinuses etc.	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.2
161	Larynx	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	2.2	2.4	5.4	0.0	0.0	3.6	0.5
162	Bronchus and Lung	0.0	0.0	0.0	0.0	0.0	0.0	3.9	8.6	30.4	58.2	67.0	128.7	97.6	163.6	123.6	18.9
163	Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
164	Thymus, Heart etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165	Other Thoracic Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	Bone	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	9.1	7.3	0.5
171	Connective Tissue	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.4	5.4	3.4	4.5	3.6	0.7
172	Melanoma of Skin	0.0	0.0	0.0	0.0	0.9	1.1	2.6	0.0	0.0	2.2	2.4	2.7	3.4	0.0	3.6	0.8
173	Other Skin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	7.3	0.3
174	Female Breast	0.0	0.0	0.0	1.6	6.0	10.6	20.8	41.2	58.7	84.1	100.5	128.7	134.7	140.9	210.9	29.0
179	Uterus, Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	3.6	0.3
180	Cervix Uteri	0.0	0.0	0.0	0.0	0.0	1.1	2.6	10.3	8.1	2.2	9.6	8.0	13.5	22.7	3.6	2.6
181	Placenta	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
182	Body of Uterus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	6.5	4.8	16.1	16.8	13.6	25.5	2.3
183	Ovary etc.	0.0	0.0	0.0	0.0	0.0	1.1	3.9	5.2	10.1	32.3	31.1	37.5	43.8	36.4	50.9	7.5
184	Other Female Genital	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.7	0.0	2.2	0.0	0.0	0.0	9.1	10.9	0.7
188	Bladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	8.0	10.1	4.5	29.1	1.3
189	Other Urinary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	6.5	16.7	8.0	30.3	31.8	29.1	3.3
190	Eye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	3.6	0.2
191	Brain	0.0	0.0	1.0	3.3	2.6	2.1	1.3	3.4	8.1	2.2	7.2	16.1	20.2	13.6	7.3	3.2
192	Nervous System	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.4	0.0	0.0	0.0	0.0	0.2
193	Thyroid Gland	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	2.2	2.4	0.0	3.4	0.0	3.6	0.4
194	Other Endocrine Glands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	3.6	0.2
195	Other and Ill-defined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.4	2.7	3.4	0.0	14.5	0.7
199	Mal Neoplasm Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	22.7	47.3	1.6
200	Lymphosarcoma etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	2.4	5.4	3.4	18.2	14.5	1.3
201	Hodgkin's Disease	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.2
202	Other Reticuloses	0.0	0.0	0.0	0.0	0.0	1.1	1.3	1.7	8.1	12.9	14.4	21.4	13.5	27.3	32.7	3.9
203	Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	14.4	10.7	13.5	22.7	21.8	2.3
204	Lymphoid Leukaemia	0.4	2.3	1.0	1.6	0.0	0.0	1.3	0.0	2.0	0.0	2.4	8.0	6.7	4.5	25.5	1.8
205	Myeloid Leukaemia	0.7	1.1	1.0	0.8	0.9	1.1	1.3	6.9	2.0	2.2	2.4	13.4	16.8	13.6	18.2	2.8
206	Monocytic Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.1
207	Other Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.1
208	Leukaemia Cell Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	3.4	0.0	3.6	0.3
233.1	In Situ: Cervix	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230-4	In Situ: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.1
	Total	**1.4**	**5.7**	**2.9**	**8.1**	**13.7**	**24.4**	**48.0**	**94.5**	**192.3**	**293.1**	**378.0**	**584.5**	**629.6**	**836.4**	**1236.4**	**123.4**

Mortality – Age-Specific Rates per 100,000 (Males)

		Age Groups															
ICD-9	Site	0-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	All Ages
140	Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	6.1	5.7	0.2
141	Tongue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	7.4	15.3	4.1	6.1	5.7	1.1
142	Major Salivary Glands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	3.1	4.1	12.1	0.0	0.4
143	Gum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1
144	Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.1	0.0	0.0	0.2
145	Other Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	6.1	17.2	0.4
146	Oropharynx	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	1.9	0.0	7.4	3.1	8.3	0.0	5.7	0.7
147	Nasopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	2.0	0.0	0.0	0.0	6.1	0.0	0.2
148	Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	4.1	7.4	3.1	4.1	0.0	0.0	0.7
149	Pharynx Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.9	4.1	0.0	0.0	0.0	6.1	0.0	0.4
150	Esophagus	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.7	3.8	6.1	4.9	12.2	20.7	24.2	34.5	2.3
151	Stomach	0.0	0.0	0.0	0.8	0.8	0.0	5.0	3.3	7.7	10.2	24.7	48.9	70.2	97.0	86.2	7.5
152	Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	2.0	0.0	3.1	4.1	0.0	11.5	0.6
153	Colon	0.0	0.0	0.0	0.8	0.8	1.0	1.3	5.0	15.4	14.3	42.0	45.9	86.8	121.2	149.4	10.0
154	Rectum	0.0	0.0	0.0	0.0	0.8	0.0	5.0	3.3	7.7	20.4	37.0	39.8	90.9	60.6	166.7	9.1
155	Liver	0.7	1.1	0.0	0.0	0.0	1.0	0.0	5.0	1.9	4.1	14.8	15.3	12.4	18.2	46.0	2.9
156	Gallbladder etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	1.9	4.1	7.4	3.1	12.4	6.1	23.0	1.4
157	Pancreas	0.0	0.0	0.0	0.0	0.8	0.0	5.0	5.0	3.8	22.4	29.6	45.9	78.5	84.8	160.9	9.0
158	Peritoneum etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	4.1	4.9	3.1	0.0	12.1	5.7	0.7
159	Other Digestive Tract	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	6.1	34.5	0.7
160	Nose, Sinuses etc.	0.0	0.0	0.0	0.0	0.8	0.0	2.5	1.7	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.4
161	Larynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	1.9	2.0	2.5	9.2	16.5	6.1	23.0	1.4
162	Bronchus and Lung	0.0	0.0	0.0	0.0	0.8	1.0	3.8	16.5	46.2	89.6	192.6	269.1	392.6	557.6	517.2	43.6
163	Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	3.8	2.0	0.0	3.1	12.4	6.1	0.0	0.8
164	Thymus, Heart etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1
165	Other Thoracic Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	Bone	0.3	1.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.9	3.1	0.0	0.0	5.7	0.7
171	Connective Tissue	0.0	0.0	1.0	0.8	0.0	0.0	1.3	1.7	0.0	4.1	0.0	3.1	4.1	6.1	5.7	0.8
172	Melanoma of Skin	0.0	1.1	0.0	0.0	0.8	1.0	1.3	1.7	0.0	6.1	2.5	0.0	4.1	18.2	5.7	1.2
173	Other Skin	0.0	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	5.7	0.3
175	Male Breast	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
185	Prostate	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.3	0.0	14.3	32.1	64.2	181.8	272.7	500.0	18.3
186	Testis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
187	Penis, Male Genital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.9	0.0	0.0	0.0	0.0	6.1	0.0	0.2
188	Bladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	7.7	6.1	12.3	18.3	49.6	60.6	92.0	4.7
189	Other Urinary	0.3	0.0	0.0	0.0	0.0	0.0	3.8	1.7	5.8	10.2	2.5	30.6	16.5	18.2	57.5	3.4
190	Eye	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.8	0.0	0.0	0.0	4.1	0.0	0.0	0.3
191	Brain	0.3	1.1	1.0	2.4	1.6	1.0	1.3	3.3	9.6	12.2	7.4	21.4	12.4	48.5	34.5	4.1
192	Nervous System	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
193	Thyroid Gland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.1
194	Other Endocrine Glands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
195	Other and Ill-defined	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	3.1	0.0	6.1	11.5	0.4
199	Mal Neoplasm Unspecified	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	8.3	18.2	51.7	1.3
200	Lymphosarcoma etc.	0.0	0.0	0.0	0.8	0.0	0.0	0.0	3.3	1.9	6.1	2.5	9.2	8.3	18.2	23.0	1.7
201	Hodgkin's Disease	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	2.0	0.0	0.0	0.0	0.0	5.7	0.2
202	Other Reticuloses	0.3	0.0	0.0	0.0	0.8	0.0	0.0	5.0	5.8	8.1	22.2	18.3	20.7	36.4	28.7	3.6
203	Multiple Myeloma	0.0	0.0	0.0	0.0	0.8	0.0	0.0	1.7	0.0	4.1	9.9	9.2	28.9	60.6	51.7	3.1
204	Lymphoid Leukaemia	1.0	2.2	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	4.9	18.3	12.4	18.2	69.0	2.7
205	Myeloid Leukaemia	0.3	0.0	0.0	1.6	0.8	1.0	1.3	0.0	5.8	4.1	9.9	9.2	16.5	42.4	28.7	2.8
206	Monocytic Leukaemia	0.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
207	Other Leukaemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
208	Leukaemia Cell Unspecified	0.0	0.0	0.0	0.8	0.0	1.0	1.3	0.0	0.0	0.0	4.9	0.0	8.3	12.1	5.7	0.8
230-4	In Situ: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	**4.1**	**7.6**	**2.9**	**9.7**	**10.6**	**10.1**	**36.3**	**80.9**	**151.9**	**274.9**	**506.2**	**743.1**	**1206.6**	**1697.0**	**2275.9**	**146.4**

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